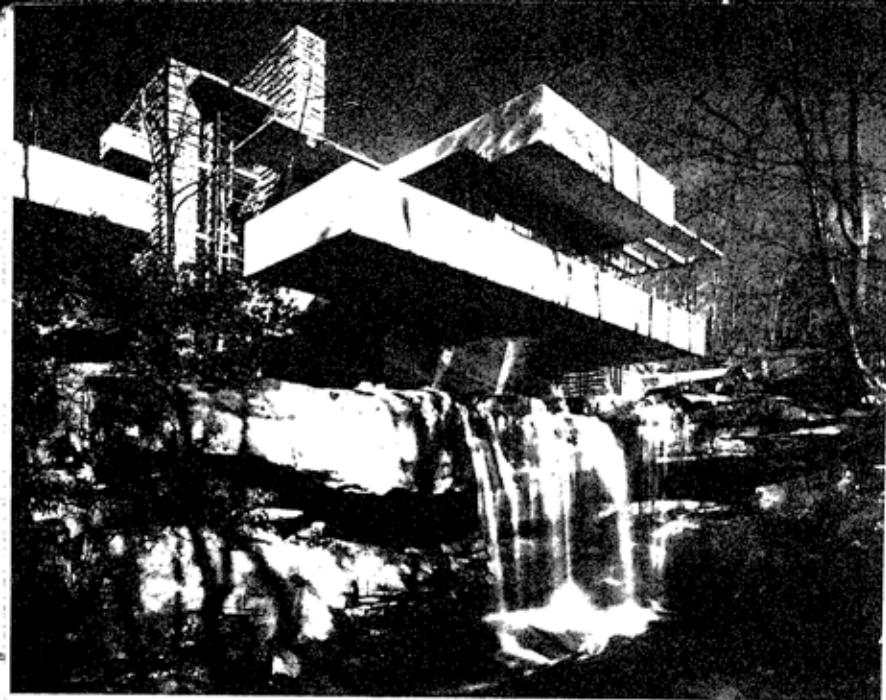


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To the critics at Watlington

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Dates of buildings are generally a mean between start and finish. In some cases the date is that of the feature I refer to.

Plans, etc. have been excluded because in my belief one should hear the song before one reads the score.

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CHAPTER 1 : *First Flowering*

BUILDINGS rise among us like works of nature, weatherbeaten, inscrutable, so little do we know of the state of mind of those who built them or of their interaction on one another. Yet the message is there, as vivid and readable as the animals our ancestors drew on their cave walls twenty times as long ago. And if you can decode it, the world becomes a lot less dull to live in. This is a code-book.

History is generally written as a monster serial like an over-long novel with too many characters and an unsatisfactory plot. Architecture does not have to be studied that way, because its past is still there, continually speaking to us in its many voices, some so beguiling that every few years somebody falls for the temptation to imitate. Its past is still there in another sense : ways of building as old as history still survive in primitive corners of the world, so that with our own eyes we can see the beginning of the story.

Flying from north to south across any of the land masses of the world, you pass from the sub-arctic evergreen forest over woods of sinewy deciduous trees, then across hills of soft stone or granite mountains, then over mud plains and sand deserts, and as you approach the Equator the eternal bright green of the tropical rain forests passes below you. These are the

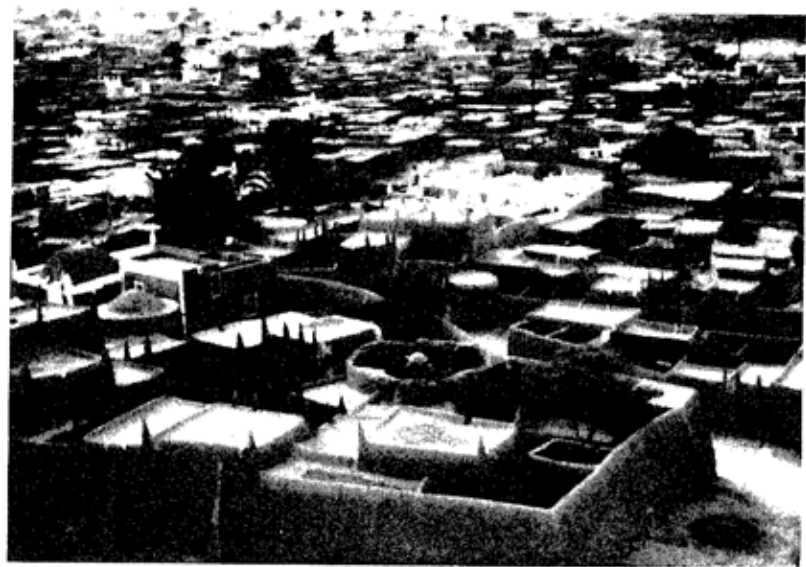


An Indonesian village of the forest-belt

elements of building : wood, fibrous, strong in tension ; stone, crystalline, strong in compression ; mud, plastic, delightful to model with.

Regions rich in only one of these materials have managed with it alone. So in the northern forests from Canada across Siberia to the Baltic you find wooden houses and barns, built with posts stuck into the ground and sloping rafters roofed with thatch or shingles, lined inside and out with resinous pine

boards ; and right round the world in the jungles of Borneo or Brazil or the Congo are wooden houses too, beautifully framed up and thatched, but with their wall posts left open to let in the breeze. In between, in the mud and sand belt that runs across Africa and the Near East, across the northern plains of India and along the Mexican frontier, is the region of sand castles and toy forts and flat-roofed or domed mud houses, baked by the sun, scoured by the rains—an international style created not by copying but by force of circumstance. Regions with nothing but stone for building are rare, since forests generally go with



Kano, Nigeria, a walled city of the mud-belt



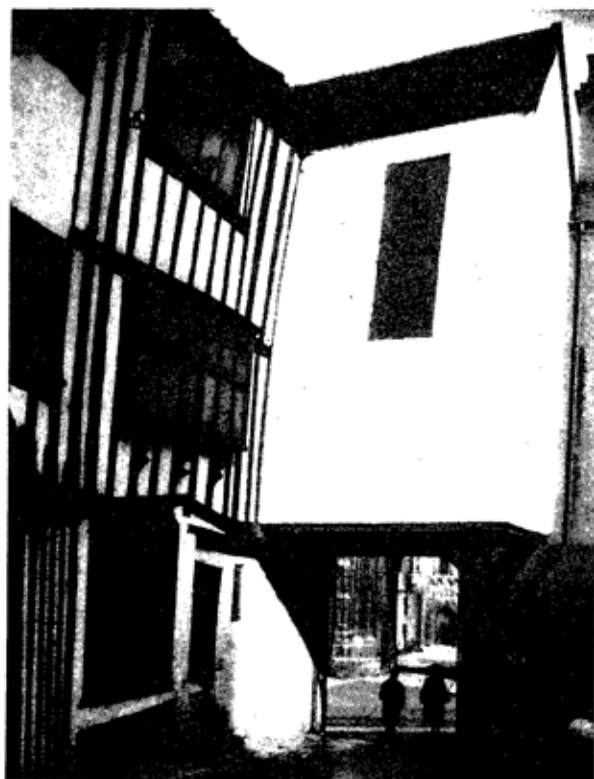
Stone from the fields and reeds from the bog : a crofter's cottage in the outer Hebrides

mountains ; but in remote corners like the Hebrides you find huts and crofts entirely built of granite boulders, and vanished civilisations like those of Peru, Egypt and Cambodia made a point of using stone alone for their most enduring monuments : this, because of stone's weakness as a beam and because they had not learnt about the arch, meant very short spans, tightly clustered columns and an effect of overpowering solidity.

Fortunate regions like our own with a variety of materials to choose from soon learnt the best use for each. They learnt to reinforce mud with wattle hurdles, and to use this as an infilling between wall-posts in what we now call half-timbered houses. They learnt to make cement and then concrete and eventually to

reinforce concrete with steel. They learnt to make bricks as a handy substitute for monolithic mud, and to bake tiles or split stone as a durable replacement for thatch. They learnt the uses of copper and lead for pipes and roof sheets, and created glass. Wherever possible, they used materials strong in compression like

East Anglian wattle-and-daub on a house whose bent shape suggests the sinewy oak beneath



stone and brick for their walls, and materials strong in tension like wood and iron for their roofs. So the walls of buildings stood up for centuries, long after roofs fell in or blew out, and made picturesque or melancholy ruins.

But until lately, in each civilisation as it rose and fell, there was a huge difference between the effort and technique put into public buildings and monuments and the elementary skill available to the ordinary man building or extending his own house. In the forest belts, enormous cities of flimsy sheds sprang up, and then were completely laid waste by fire or war like fifteenth-century Angkor or seventeenth-century London or twentieth-century Tokyo, leaving only their public buildings standing. In the desert belts, mud houses dissolved into the earth in each generation, leaving nothing of Baalbek or Palmyra but the gleaming bones of temples and the tiers of silent theatres. 'Nothing beside remains.'

Partly for this reason, histories of 'architecture' are apt to concentrate on public buildings, just as political history concentrates on public people. This kind of opera consisting solely of prima donnas singing *fortissimo* can be very trying, so in this book there will be plenty of crowd scenes. Not only are unpretentious buildings likeable in themselves and in their relationships. They also happen to be the source and point of origin of the whole story. Let us see how it happened.

In the hot mud belt where civilisation started, houses to this day are inward-looking, built round little yards,

and for coolness and security there are next to no windows in outside walls. As the family grows its compound grows like a game of dominoes, hut added to hut and court to court—an oriental palace in miniature. The village headman and the tribal chief, with the job of receiving large parties and listening to argument, need larger rooms than logs can span from wall to wall, and these the dome or the introduction of pillars make possible. From this it is, it was (the tense is immaterial) only a step to the emperor Sargon's 25-acre palace near Nineveh, with its 700 rooms, and to the great Egyptian temples, with their serried rows of fat columns richly ornamented in paint and low relief and their sequence of diminishing courts. The monuments of the Nile and the Euphrates are mudpies on a cyclopean scale, a bulldozer's world without bulldozers, with immensely thick walls often sloped ('battered') for extra strength, the Pyramids themselves being the *reductio ad absurdum* in that direction. Temples and palaces were unwelcoming, entered by the privileged only, and in Mesopotamia erected on huge platforms for extra aloofness, a habit kept up by mosques well into modern times. The light was too strong for the silhouettes of buildings to be of much interest, and the only vertical feature was the stepped pyramid or Ziggurat (e.g. the Tower of Babel), which slave civilisations rather enjoyed building, originally for defence, later for prestige, and finally (in the jungles of Central America and Indo-China) as a base for shrines of special importance.



The crowding together of these Egyptian lotus columns was necessitated by the short span which is all a single block of stone can manage without cracking in the middle

And then occurred . . . what ? Nobody can really explain the miracle of Greek civilisation. 'Something in the air' is as close as one generally gets. All we know is that in this bright air of the Aegean archipelago the Greeks took a view of the world that people still passionately share ; and that out of its savage granites and sparkling white marbles their architects made buildings that ennoble one's view of man.

The first thing the Greeks characteristically did was to turn the Egyptian temple inside out, so that it became a walled cell surrounded by a *peristyle* of columns, with a gable or *pediment* at each end and projecting eaves or *cornice* to throw off the rain. At once the design of the



In the Parthenon (438 B.C.) the principle is the same as in the Egyptian temple, but the columns are out in the sun and shaped and spaced to take it

column itself, now out in full sun, and of the luminously shadowed lintel or *entablature* it supported, became the key to the character of the whole building, and infinite care was devoted to the modelling and relationship of the two. Greek buildings were as finely shaped to take the sun as an aircraft to take the air.

Roman writers like Vitruvius later did their best to analyse the miracle. They classified the different temple plans and carefully recorded the characteristics of the three types of column-and-entablature, which they called Orders, that the Greeks developed and systematically

refined. And so in the course of time these three Orders dominated the architecture not only of ancient Rome, but of modern Europe, of Colonial America and of every other corner of the world developed by Europeans, from India to the Caribbean. The three Orders consequently have a long history, and it is worth getting familiar with them.

The earliest, the Doric, is the most masculine and austere, and is sometimes thought to have derived from wood construction, the grooved panels (or *triglyphs*) above each column being a vestige of the ends of beams. If so, it soon lost any such connection, and became the very apotheosis of stone. It was always the Greeks' favourite, and it developed furthest, reaching in the

Doric Revival : Edinburgh High School (A.D. 1825)



Parthenon a degree of subtlety and grandeur (including infinitesimal distortions to correct optical illusions) from which no further advance has been possible. Not surprisingly the Romans, although in south Italy and Sicily they had magnificent Greek Doric temples close at hand, went off at a tangent, and developed two variations (known as Roman Doric and Tuscan) entirely different in character, which being less dependent on dimensional precision came to suit the Georgians very well when they wanted what they called 'the solemn Roman look' for an archway or the base of a formal building. Later the British and the Germans briefly tried copying the original Greek Doric,¹ but it seldom looked right. Even the Greeks themselves sometimes got this tricky Order wrong, and produced a thoroughly dull building like the Theseion at Athens.

The second Order to be developed, the Ionic, is the exact opposite, feminine and even a shade effeminate. The column had much less variation in thickness (*entasis*) than the Doric, it had a base, which the Doric had not, and it had a much more elaborate capital with spiral *volute*s possibly copied from Egypt. Its finest example, the Erechtheion, is also on the Acropolis at Athens. In this case too the Romans watered it down, and produced a more masculine version which did very well for Georgian front doors and looks very handsome indeed on the Royal Crescent at Bath. The original Greek Ionic was seldom copied, though one can see an exact replica (in black) in St Pancras Church, London.

¹ Edinburgh High School is a good British example.



above

The Erechtheion (393 B.C.), also on the Acropolis, is the purest example of the elegant Ionic order

right

Ionic Revival: St Pancras Church, London (A.D. 1820) by 'Athenian' Stuart



The third Order, the Corinthian, with its splendid capital wrapped in acanthus leaves, is the most dressed-up and grandiose and in a way the most un-Greek of the three. It certainly suited the Romans best, and they took it over almost unchanged and used it for the majority of their temples. With its elaborate cornice decorated by little brackets or *modillions* it was the obvious choice for Georgian assembly rooms and for

Corinthian grandeur in the temple of Zeus Olympus
at Athens (174 B.C.)



the porticos of churches and great country houses. St Martin-in-the-Fields has one of the finest examples in London.

The Greeks, with their passion for quality rather than



Georgian Corinthian : St Martin-in-the-Fields, London (A.D. 1725) by James Gibbs

quantity, having taken little more than a century (500–400 B.C.) to perfect their three Orders, were content to leave it at that. Structural experiment did not interest them, nor did they believe in elaboration or luxury at home. On the contrary, they had an idea that in our own day has had regrettable consequences—that art is for the glorification of the State. Their states *were* glorious, and they were small, and they never succumbed to individual despotism. But they were none the less tyrannical in many ways, and their moral blindness was reflected in an aesthetic rigidity that ended in mere stagnation. In course of time, their artists had to be content with jobs as interior decorators to the first great engineers of the world, the Romans.

The Romans really enjoyed *building*, and because they built extremely well and their empire covered almost the whole of the known world, not merely a few temples and theatres but their whole physical environment (town-plans, houses, blocks of flats, palaces, stadia, theatres, baths, temples, law-courts, fortifications, aqueducts, triumphal arches and tombs) can be pictured from what survives in different parts of Europe, the Near East and North Africa. It was a hard, echoing environment, unrelieved indoors by timber or textiles, with narrow stone-paved alleys intersecting between the blank walls of courtyard houses and opening occasionally into a wide marble square surrounded by colonnades : a world of stone. Stone in enormous blocks, stone broken up and mixed with cement to form concrete, thin bricks and tiles, marble and mosaic, these

were the materials with which the Romans built and faced their colossal arched and vaulted and domed structures, carried aqueducts across hill and valley, and created monuments which survived centuries of pillage to become the models for St Pauls' Cathedral and New York's Pennsylvania Station, not to mention Marble Arch and the Duke of York's column.

This was a whole world, as complex, as rich and as materialistic as our own : impossible to penetrate in this chapter. But two things stand out. First, great Roman buildings were conceived and built in huge masses of masonry—concrete or brick—rather than in individual stones, and in this way were closer in spirit to Egypt than to Greece. These masses formed the piers and vaults of the great baths, the tiered arches of amphitheatres, and the 20-foot-thick drum supporting the great coffered saucer dome of the Pantheon, one of the world's miraculous survivals. Consequently the carved columns and pilasters and the whole gorgeous apparatus of the Orders had ceased to be a language of structure and had become a language of ornament, sometimes merely a thin marble veneer which later provided delightful raw material for decorators. This did not deter later ages from copying every mannerism. The superimposed Orders of the Colosseum turned inside out and reproduced in miniature became the Circus at Bath. The arched entablatures in Diocletian's palace at Spalato became one of the favourite motifs of the Italian Renaissance.

Secondly, the Romans developed a passion for



above In the Colosseum (A.D. 82) the three Orders are purely for decoration. The brick arches are the structure

below Well below the present Roman street level stands the great brick drum of the Pantheon (A.D. 124) with its concrete saucer dome, whose central eye is open to the sky



symmetry, and for twinning rooms and buildings on each side of what they called an axis rather as the limbs of a vertebrate are twinned on each side of its backbone—only with less reason, since buildings do not have to walk. This looks pretty on paper but can be portentously dull in reality. Among the duller products of this principle was the basilica, a vast columned hall with a semi-circular projection or *apse* at each end, only worth mentioning because it happened to be the architectural origin of the Christian church. But that is another story.

CHAPTER 2 : *Second Flowering*

It is difficult for us to imagine the immensity of the ruins of Rome, and how they haunted the imagination of generations of simple Europeans. In England many people were convinced that they were in fact haunted, and kept well away from the bat-infested villas and the weedy streets of plundered garrison towns. In Italy, native tribes and invaders alike were less squeamish, and treated the echoing marble halls and palaces as one great glorious quarry. Endless stocks of Corinthian columns were available in assorted sizes, and the simplest way to build a church was to copy the Roman basilica, but with an apse at one end only, and if a complete set of columns could not be found odd ones could be made up to size with a stone block on top. For the Church was now the only big thing in people's lives, and the only big building in their towns. The end of the world in the year 1000 was not so very far off, wars and rumours of wars seemed to increase from generation to generation, and the monasteries (as in Tibet until our own day) were the only refuge for men of good will.

While their small lamps flickered in the surrounding gloom, light and life streamed out from the East. The old Greek colony of Byzantium (to which Constantine had transferred the capital of the Empire in A.D. 324)

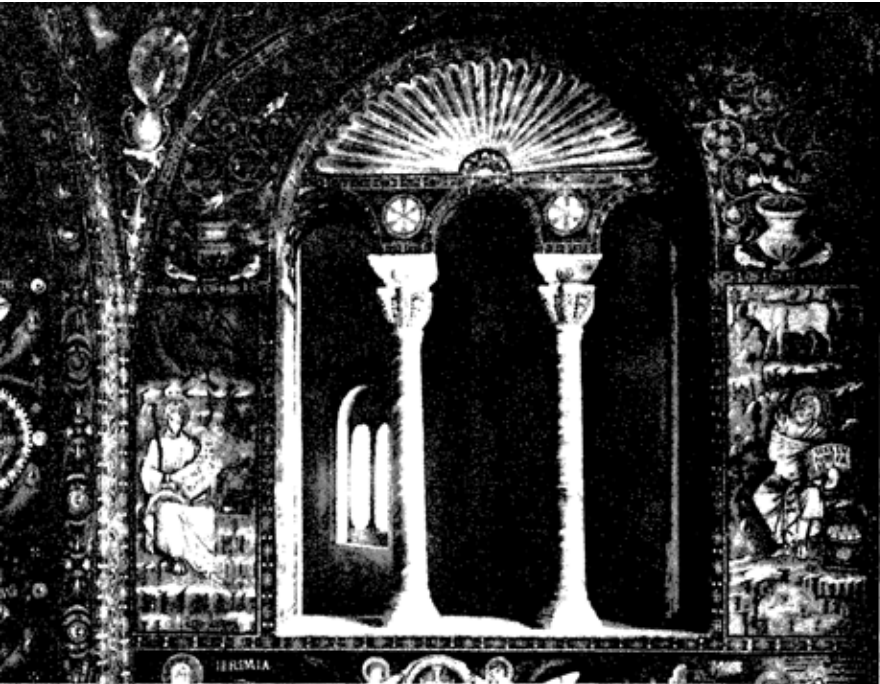
gave its name to a manner of building as magical and sophisticated as the great city itself. It was based on the exploitation of one idea in one great building, the emperor Justinian's cathedral of Santa Sophia. The idea was the dome—nothing new in itself, and used fairly often by the Romans for round or polygonal tombs from the Pantheon onwards. To put a dome on such a building was in fact the simplest way to roof it, but to put a dome on a cube-shaped building was not so easy, until somebody thought of shaving off the four top corners of the cube in a gentle curve known as a *pendentive*, and so achieving a circle on which it was easy to place a saucer, drum or onion dome. At once buildings consisting of a series of such domed cubes (like Westminster Cathedral) became possible. But the architects of Santa Sophia had a still more dramatic and architectonic conception. For them, as later for Alberti and Bramante, the height of drama was one great dome, model of the great globe itself, and they worked up to it from half-domes of increasing size opening into and supporting one another. Conversely in this tremendously strong yet airy structure one can feel the forces of gravity led from the apex downwards and outwards in a series of gently curving leaps. It was a piece of truly Roman engineering but touched with a genius the Romans did not possess, and turned to art. And it was the first piece of architecture in which, to quote a Chinese philosopher¹, 'the reality of a building consists not in the walls and the roof but in the space within'.

¹ Lao-Tse

It was many centuries before structures of this sophistication were possible in western Europe. Justinian himself, it is true, built the elegant octagonal church of San Vitale at Ravenna and transferred to that city some of the brilliant Greek mosaicists whose solemn and luminous art magically enhanced his great brick buildings and transformed even the plainest basilica. But Ravenna's brief age of glory as capital of the western Empire soon ended, and thereafter a domed church like St Mark's at Venice or St Front at Perigueux was an exotic freak in Europe until the Renaissance. Byzantine architecture never really caught on in the



The exterior of Justinian's Santa Sophia at Istanbul (A.D. 537) is severely functional, domes and buttresses transmitting gravity as clearly as in a Gothic cathedral. In placing the central hemisphere over a cube the Byzantines went one better than the Romans



above

The rich mosaics and typical detail of Justinian's San Vitale at Ravenna (A.D. 547)

left

St Front, Perigueux (1120) shows the Byzantine dome-and-pendentive system reduced to its austere essentials

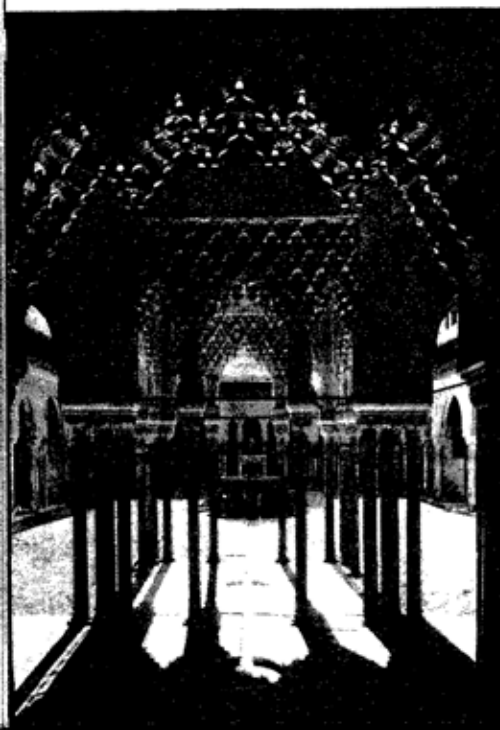
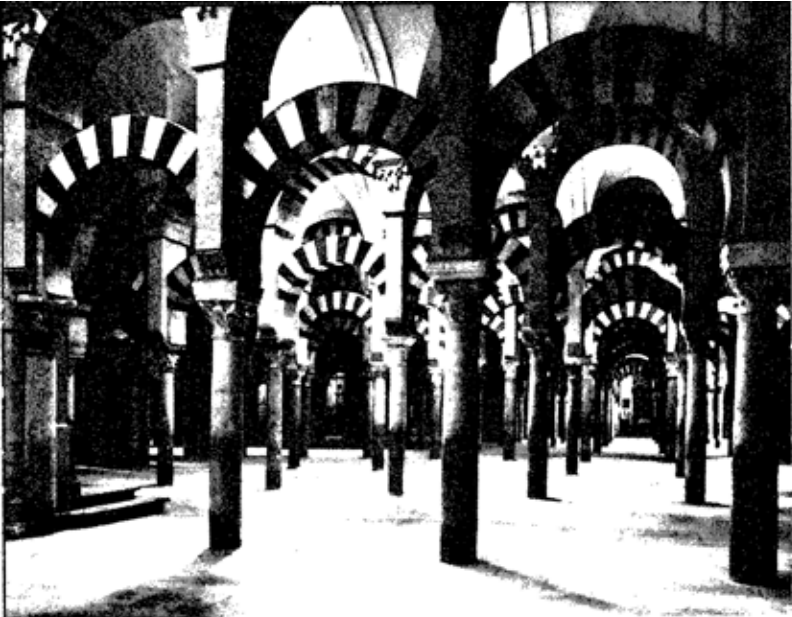


West. Its single-minded inflexibility told against it when the agile European mind came into its own again, and nobody until the Victorians cared to revive its often vulgar misuse of antique columns, its multi-coloured marbles and its overcrowded windows.

Sixty years after the triumphant opening of Santa Sophia ('Solomon,' cried Justinian, 'I have excelled you'), Mahomet's Hegira set off one of the great tidal waves of history, and his followers swept across North Africa, Sicily and Spain and into the plains of India, bringing with them a hybrid style, with echoes of Egypt in their many-columned halls and echoes of Byzantium in their onion domes. Structurally primitive and comparatively puny in scale, Moslem architecture was surprisingly pretty and feminine considering the ferocity of its proponents, and in the darkest days of the West (A.D. 786) created at Córdoba a mosque whose forest of marble shafts and horseshoe arches is still one of the wonders of Spain. In that country the inward-looking courtyard house of the mud regions, with its colonnades and fountains and cypresses and Arabian Nights *décor*, reached a degree of elegance and charm seldom seen even at Pompeii, and unimagined in the stockaded settlements of the north.

At their farthest east, Moslem invaders discovered in India the intricate rock-cut temples and monasteries of a rich and sensuous civilisation, whose granite sculpture had reached its classic moment just as European civilisation touched its lowest ebb.

For it was western Europe's destiny to be born again



Moslem architecture from Spain to Indonesia reflects the Byzantine influence on the Turkish invaders. These two Spanish examples, the mosque at Cordoba (786) *above*, and the Alhambra palace at Granada (1350) *left*, show the degree of refinement it reached, particularly in Spain and India

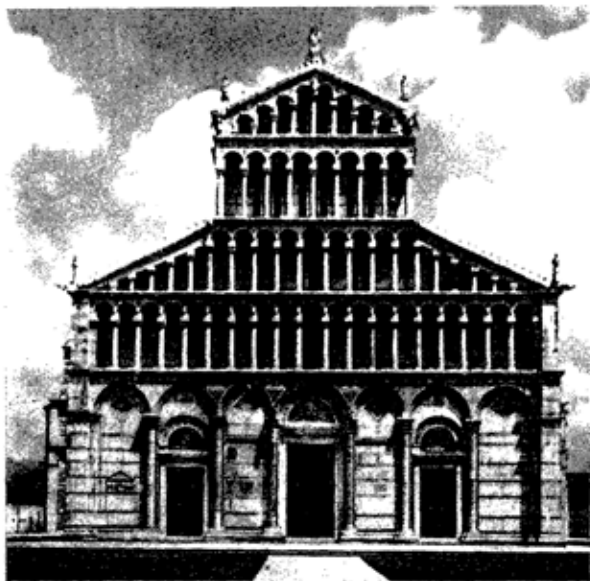


India's indigenous architecture was sculpture on an immense scale, as one sees in this temple (780) cut out of the hillside at Ellora

out of chaos, and to create a new architecture not out of the relics and memories of past grandeur but by getting back to fundamentals. It is the co-existence of these two tendencies (decadent and primitive) which makes the Romanesque period and even its name so confusing. This is where the waters divide. Mainstream Graeco-Roman runs into shallows and peters out, while a tough and savage strain floods in from the north. One can see both streams running together in north Italy. In the Cathedral at Pisa, and the Leaning Tower copied from its west front, the great classical Orders we saw on the Colosseum have been scaled down to a kind of wall decoration, and the interior shows no



Romanesque architecture starts in Italy in the re-use of Roman columns and marbles. San Miniato at Florence (1013) *above* is inspired by Pompeii. Pisa Cathedral (1092) *below* has an un-Roman elegance. Both show Byzantine influence



advance from the Roman basilica of five centuries before. Even the graceful and truly 'Romanesque' front of San Miniato at Florence is a revival, not a step forward. But in the gloomy interior of San Ambrogio in Milan an entirely different and sonorous note is struck. The barbarians of the north (represented by the Hohenstaufen emperors of the Rhineland) have begun to make their influence felt.

We have to fly right up to Normandy to see the beginnings of this story, and even so, while one can trace the influence of one building on another from northern France and Germany up to Scotland, down to Spain, up the Rhine to the Alps and Lombardy, and overseas to

The sombre, northern-style interior of San Ambrogio, Milan (1140)



Sicily, the mystery of the source of inspiration of the Normans' tremendous and solemn style remains a mystery, deeper than its gradual transmutation into Gothic. One would not have expected these blond restless Norsemen, shipbuilders and men of action, to have had the patience to build with such an eye to eternity in stone, and one can only guess that the castle-building necessary to hold down new territories concentrated their minds on solidity and the avoidance of inflammable roofs.

Buildings of about 1100 are often horribly ugly to our eyes, particularly where the nineteenth-century restorers got at them. The Rhineland cathedrals with their cramped unwelcoming apses and their four clumsy towers like the legs of upside-down tables, are not easy to like, and French and English Norman exteriors are often even more elementary and crude. The Norman builders paid no finicky attention to the relationship of walls to openings or of verticals to horizontals, and had no book of rules to fall back on. They were constructors, strictly concerned with the bones of buildings rather than their skins, and from now on it is the bones of buildings that count. Two innovations, the ribbed vault and the clustered pier, take us right out of the world of crustacean building into the world of vertebrates—and incidentally made it out of the question to go on using Roman bits and pieces.

It started with the vault. Roofs hitherto had been either of wood roughly triangular in section, or heavy masonry lids. The Normans, having tried both, hit on



The granite cathedral of Speyer in Germany (1030) is North Italian in its detailing but has a gloomy grandeur of its own

the idea of a stone cross-vault carried on stone ribs. It had two practical advantages. It concentrated the roof load at the four corners of each bay, so that the wall between had nothing to carry and could contain a much larger window : this was the beginning of the great range of jewelled *clerestory* windows in the Gothic cathedrals. And it turned the roof into a frame-and-panel structure lighter and needing less temporary centering than ever before. Having got thus far, the Normans logically carried the rib idea right down to the floor using a cluster of shafts, one to carry each rib, instead of a single column. The dull horizontals of the Roman basilica thus gather themselves into a rhythm of *bays*, in which lines instead of walls predominate, and vertical lines rather than horizontal.



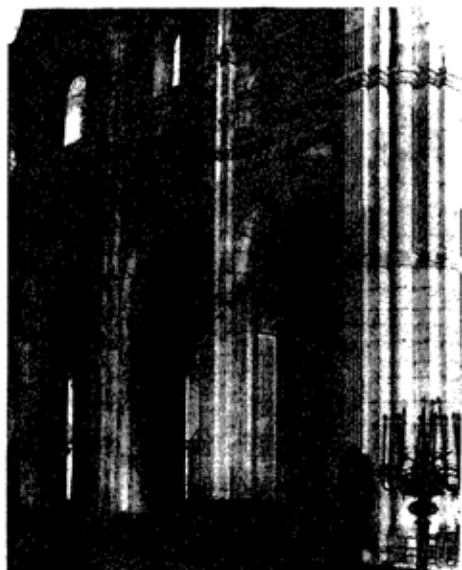
The Norman vault at Durham (1133) shows how a pointed arch was introduced so as to enable the diagonal arches to remain semicircular. It was the first ribbed vault in Europe

The Normans were not quite out of the wood with the problem of vaulting. The diagonal ribs in each bay were necessarily longer than the straight ones, and while this could be dealt with by stilting the straight ones or depressing the diagonal, it was better still to keep the diagonals a pure semi-circle and give the more eye-catching straight arches a point. Two great Norman churches, at Caen and Durham, show how this simple step was taken. Both are tremendous monuments to the Normans' ruthlessly abstract mentality, a strange mixture of savagery and sophistication.

Western Europe was still too divided and disorganised for any new idea to spread fast or far, and between

Durham and Tuscany the degree of 'Romanesqueness' varies in different regions. In the central provinces of France, Auvergne and Aquitaine, a barbaric profusion of ornament and a smaller scale takes all the grimness out of the style. Farther south in Provence, and in the old Roman town of Autun, there is more than a touch of Rome in proportion and detail. Burgundy developed a version more restrained than Auvergne, more elegant than Normandy, which spread along the pilgrim route all the way from Vézelay to Santiago de Compostella in the far north-west corner of Spain, and incidentally endowed those two great churches with the most beautifully sculptured doorways so far seen in Europe. By the middle of the twelfth

These two great Burgundian churches of 1100, Autun *left* and Vézelay *right*, are stylistic hybrids, with their Roman vaults, their Byzantine detail and their Gothic pointed arches and clustered columns

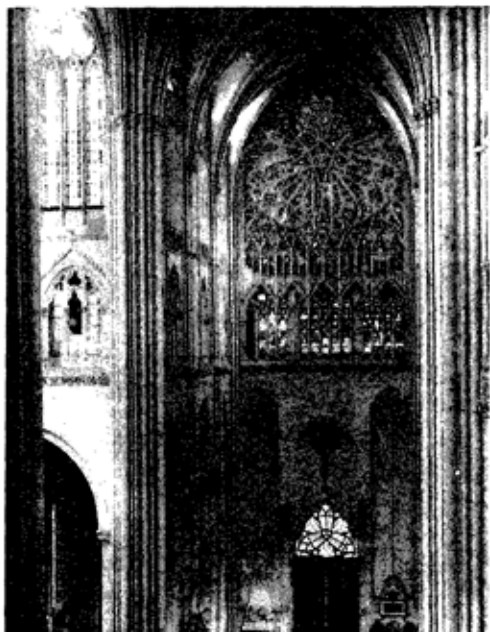
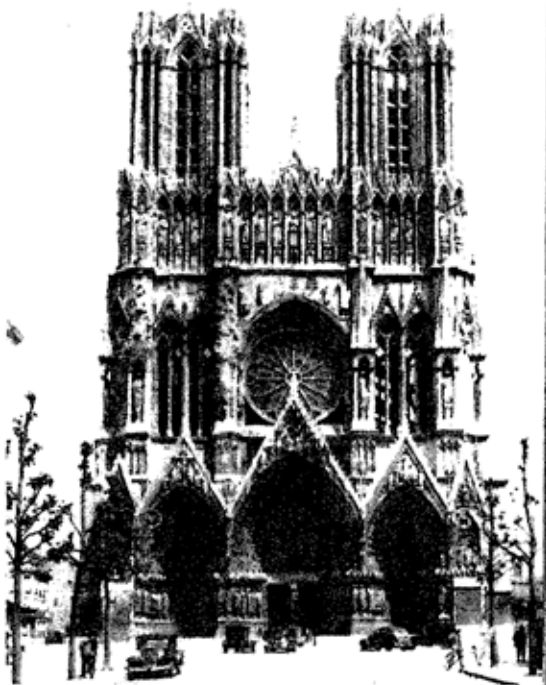


century, one way and another, the technique and energy existed all over Europe for a great leap forward in architecture.

That the leap in fact was taken by the French of the Île de France is not surprising. It was in the new schools of Paris and Chartres that a few brilliant teachers had the courage to reject the monastic conception of 'authority', and to use the rediscovered methods of logic to explore philosophy and the physical and moral sciences. A patron like Abbot Suger of St Denis backed the young engineers of his day as bravely as the Prince Consort backed them 800 years later, and achieved a building as daring as the Crystal Palace. Technically, the idea was to exploit the pointed arch and the rib-and-panel roof by extending it over the whole building. Arches thrust outwards at their bearings, and it was entirely consistent with this notion of the building as a diagram of forces to take this thrust not by a heavy half-arch hidden in the side-aisle roof (as the Normans had done) but by *flying buttresses* as sky-high as the vault itself, weighted by pinnacles. The building, from being a ponderous thing of thick wall and heavy lid, has become an articulated skeletal structure, its forces visibly and dramatically and sometimes precariously in balance. The analogy with twelfth-century philosophy is very close.¹

In the cathedrals within a hundred miles of Paris and

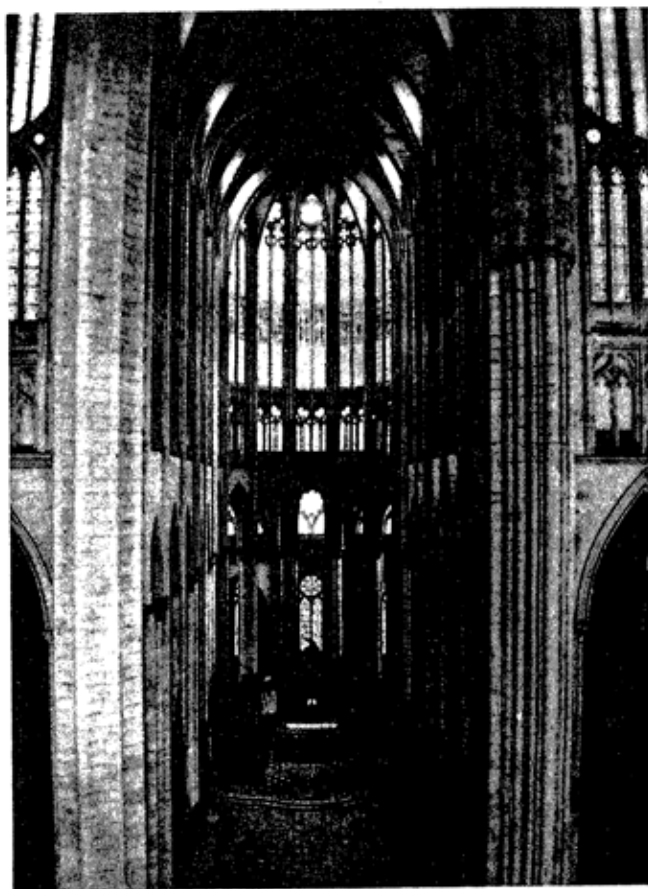
¹ Intellectual enlightenment leading to the discovery of a new technique (dialectic/structural theory) which is immediately applied to accepted data (doctrinal truths/the shape of a church) and results in original works created to the glory of God (Abelard/Chartres).



The soaring cathedrals of Rheims (1212-1241) *above* and Amiens (1220-1288) *left* with their rose windows, immense portals and magnificent sculpture, show medieval architecture in the moment of poise before it over-reached itself

in the hundred years following 1140 we can trace this second flowering of architecture following its inevitable course, touching with the west front of Rheims and the interior of Amiens a moment of poise as unmistakable as that of the Parthenon, then literally over-reaching and toppling over at Beauvais. None of them, in fact, quite

After many accidents the unfinished cathedral of Beauvais (1250-1270), tallest of all, tenuously survives



achieved the full complement of towers and spires with which they aimed to dramatise their soaring interiors, nor should we perhaps care for them as much if they had. But as they are, time-worn and war-worn, their portals watched by attenuated saints, their windows glowing with solemn colour, dwarfing humans and the flicker of candlelight at the feet of their immense piers, they remain among the achievements that make us proud to live in the world.

The spread of the Gothic idea across Christendom was much more rapid and overwhelming than anything in the story so far. Naturally the English, with their close if unhappy relationship with France, were the first off the mark. But apart from the demonstration given by William of Sens at Canterbury and the equally French feel of Westminster Abbey, early English Gothic soon had a touch of its own, cool, sharp, and inclined to subordinate the unity of the whole to the perfection of the individual detail—the same additive rather than concentrated principle as we shall later find in English town planning. Plans of English cathedrals are much more complicated and ‘bitty’ than French, and while this makes for a marvellously picturesque variety of outline (Durham, Salisbury, Wells, Lincoln, Lichfield, Norwich, Canterbury : no two alike) it detracts from the simple grandeur of their interiors, which are in any case much lower and longer than French.

What the English did do, right through the middle ages, was to explore the decorative possibilities of Gothic and experiment with its spatial potentialities



Durham Cathedral is one of many examples of the monumental form and dramatic outline of English cathedrals

with endless ingenuity. They really became interested in Gothic, and have never since been quite able to give it up. Where the logical French, having found a clear and effective form for a vault or pier or window or façade were content to leave it at that, the English went on restlessly experimenting. They multiplied vaulting ribs until they were first an elaborate network in which the original structural purpose of the rib soon vanished and the roof reverted to being a highly decorative lid—then modulated to a pure cone or fan springing from each column. They enlarged their windows, flattened their points, and filled them with elegant stone tracery, first geometrical, then curvilinear like the branches of a

right

The thirteenth-century
Angel Choir at Lincoln is
characteristic of early
English Gothic



left

The nave of Exeter,
branching like a
tree, typifies the
small-scale elegance
of English
'Decorated' Gothic



right

King's Chapel, Cambridge (1515), with its curtain walls and fan vaulting, is an example of the simplified and standardised 'Perpendicular' Gothic which survived in England while the Renaissance was well under way on the Continent



left

Annaberg, a German 'hall' church of the fifteenth century, with tall windows and tendril vaulting

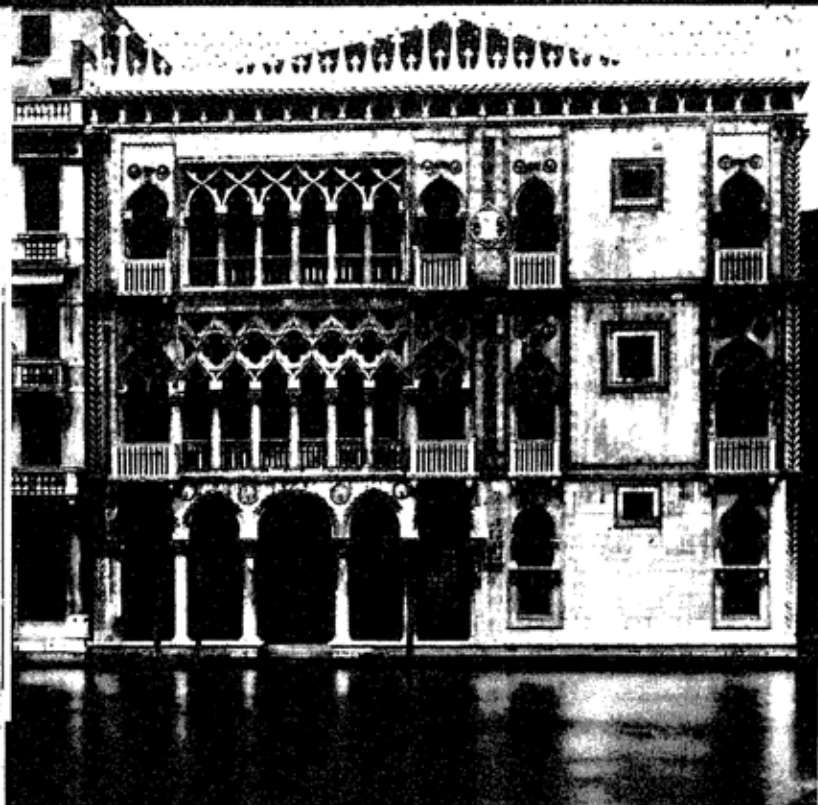


uncarved. This elaboration in detail was accompanied by a simplification in structure which resulted in the graceful Perpendicular chapels of Eton, King's and Windsor and in the elegant 'hall' churches of Germany and Scandinavia, attenuated and tree-like, with their interlacing boughs.

It is too easy to think of Gothic in terms of cathedrals. For the complete picture, one has to call to mind as well the Flemish town halls and elaborately gabled house-fronts, later lovingly reproduced in Victorian industrial cities, the pale lace-like fronts of the Doge's

Medieval townscape at Bruges, photographed in 1930



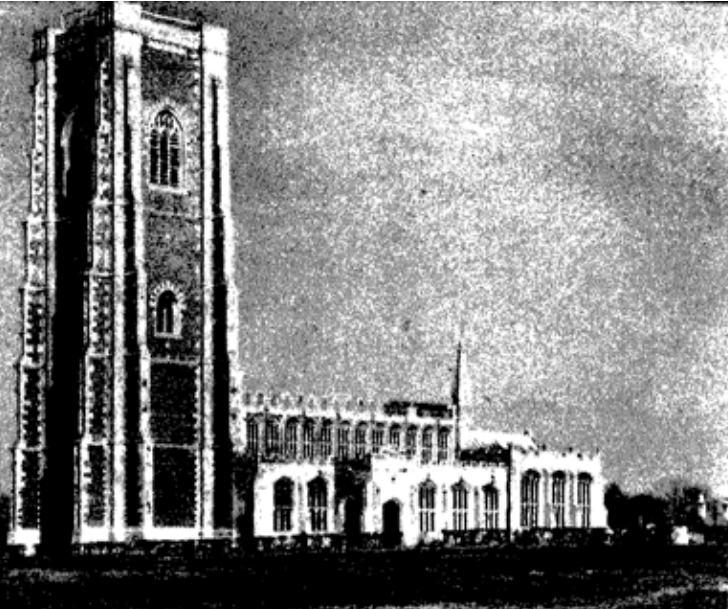


Lace-like Venetian Gothic of the Cà d'Oro on the Grand Canal (1430)

Palace and Cà d'Oro at Venice and the polychrome façades of Siena and Orvieto, beloved of Ruskin. One has to think of the cuckoo-clock carpentry and romantic roof-scapes of Rothenburg and Dinkelsbühl, girdled by their fairy-tale walls, of the far grander and technically brilliant timber roofs of southern England and the noble square church towers of Suffolk and Somerset, of grey rain-swept village churches of all degrees, and of manor-houses not unlike them, now passing slowly out of the era



An English speciality : the oak hammer-beam roof of Grundisburgh, Suffolk, fluttering with angels



above This Suffolk 'wool' church, Lavenham, with its monumental flint and limestone tower, could fit comfortably under the vaults of Beauvais, Milan or Cologne

below Compton Wynyates in Warwickshire (1520), with its topiary garden, is an example of the English manor in process of change from a castle into a country house



of moats and machicolations into the era of immense barns and panelled halls and clipped yews. The Victorians' passion for the middle ages and their struggles to reproduce its architecture have ensured that the feel of this period is more familiar to us than any other.

But before that revival, an even more dramatic attempt to enter into the spirit of the past was to be made.

CHAPTER 3 : *Revivals*

HISTORIANS of art have to hop about the world, chasing the flame of inspiration as it dies in one country and blazes up in another. But while we now inevitably cross the Alps to Italy, it is in pursuit of a phenomenon nothing like as sudden or as mysterious as the French cathedrals. For one thing, the flame had never entirely died in Italy. If one compares the façade of San Miniato (1013 : p. 26) with a famous work of the early Renaissance, Brunelleschi's Foundling Hospital, or the interior of Pisa cathedral with the interior of the same architect's church of San Spirito, one can see how little things had changed in 400 years and how gentle and natural the transition was, at any rate in Tuscany. The fact was that the Italians never caught the classic Gothic spirit expressed in the articulated skeletal structure. Gothic was just a *décor* to them, as easily dropped as picked up.

The real change in fifteenth-century Florence was a matter of atmosphere more than of style. When people spoke of a 'renaissance' they meant that in that air, at that place, a group of people had the sensation that sometimes comes to individuals of being born again. They felt they held the world in the palm of their hands and were on the brink of deciphering the system of perfect geometry that must control the universe.



Brunelleschi's Foundling Hospital façade in Florence (1420) shows how the Renaissance had already dawned in Italy while the rest of Europe still experimented with new forms of Gothic

Scholars and poets, painters and sculptors, made discoveries that were sometimes archaeological, sometimes optical or anatomical, sometimes mathematical or intuitive, but were all felt to be direct contributions to the understanding of a divine Order that lay very close below ordinary appearances. Sharing such discoveries, it was natural that they leapt the boundaries between one art or science and another : they believed that a man might find the complete answer in his lifetime.

So we are suddenly in an age of individuals, each with



Two Tuscan interiors, one Romanesque *left* (Pisa, 1092), one Renaissance *right* (San Spirito, Florence, 1425), show the short step that had to be taken to slip back into 'Roman' architecture

his personal style—a phenomenon which even the most devoted researchers have failed to identify in the middle ages—and from now on it will be through the achievements of men of genius that the story will unfold. All the same, through their influence on one another, fashions and movements will come and go, all the more compelling since problems of *technique* in brick and stone had now been mastered, and people's minds could concentrate on problems of *expression*. In fact designers of the Renaissance, to the shocked dismay of Victorian critics, were just not interested in clarity or integrity of structure, and turned a blind eye to tie-rods, false fronts, fake windows and other such beauty aids. Provided the effect was dazzling, it was nobody's business how it

was done, least of all the business of the humble workman. Between the genius at his drawing-board and the man with the trowel or chisel a gulf developed which in the course of time was to have important consequences.

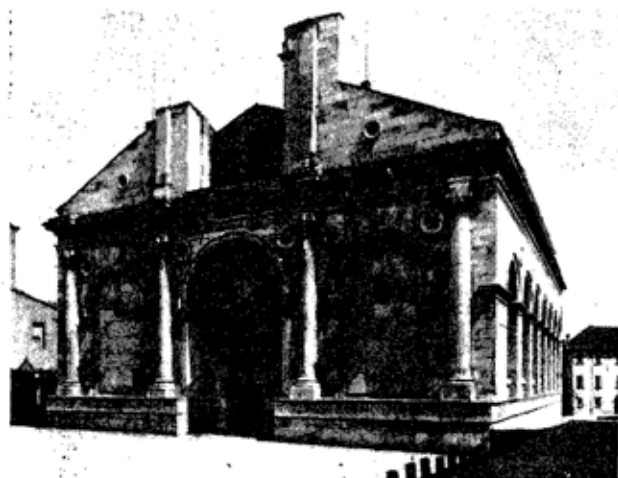
Meanwhile under the patronage of the Medici at Florence and later of the great Roman and Venetian and Lombard families, palaces as well as churches sprang up and set the pace. Palaces nearly always took the form of immense hollow-square blocks frowning down on narrow alleys, with a glimpse of a sunlit colonnaded courtyard through a central arched doorway. Some memory of Etruscan fortresses and Roman walls suggested rough-faced and deeply cut (*rusticated*)

The Strozzi palace in Florence (1489) is Roman in its rusticated masonry and ponderous cornice, but still Romanesque in its use of little columns for window decoration



stonework to convey a forbidding sense of power, but the Orders in the early days were used in a purely decorative and Romanesque way, as in the eleventh-century cathedrals, and only the deeply shadowed ponderous cornice had a truly Roman scale. In Michelozzo's solemn palaces and Brunelleschi's cool and delicate churches one feels a personal touch characteristic of the early Florentine Renaissance, before Roman orthodoxy had been properly studied and propagated.

This was the life's work of a younger generation, led by Alberti and Bramante. Alberti was the kind of man who was to figure frequently among the architectural leaders of the next 300 years—the gentleman-scholar or, as he came to be called, the Amateur. He was obsessed by two conceptions: the Platonic ideal of mathematical ratios as an expression of divine Order, and the Romantic ideal of the grandeur and gravity of ancient Rome. His conviction that only a figure inscribable in a circle



This church at Rimini by Alberti (1450) is an adaptation of the Roman triumphal arch

Bramante's Tempietto in Rome (1502) was built to mark the site where St Peter was said to have been crucified



had the geometrical perfection appropriate for a church, and his experiments in translating the Roman temple-front or triumphal arch into a church façade, were to have a compelling influence on later designers. His incomplete church of San Francesco at Rimini could almost be one of the Roman ruins we see in the paintings of Mantegna, among whose pupils, as it happens, was Bramante. In Bramante Alberti's idealism found an accomplished exponent, who showed in his magnificent plan for St Peter's the culmination of all the researches into centralised churches, and in his little circular 'Tempietto' a cool appreciation of classicism which marks the end of the stage of romantic enthusiasm and the arrival of the High Renaissance. Rome, in these first years of the fifteenth century, takes over from Florence.

We now enter on a century and a half of restless and complex experiment, overwhelming in its influence on the architecture of the whole world. One could divide and sub-divide this period in many ways, and future scholars will no doubt propound a new one. But just as the Victorian threefold division of English Gothic caught on and is still useful, so it seems more than likely that our present-day threefold division of the mature Renaissance will last ; so here it is.

1. CORRECT ROMAN

The cold formality of a great building like Rome's Farnese palace would never have been imitated so widely in Europe and America if it had not been for the patient researches and propaganda of two scholars, Serlio and Palladio, who made it their life's work to edit Vitruvius, codify the discipline of the Orders and explore their application to the needs of their day. This may sound dry, and there is an element of dryness in Palladio's Venetian churches, which solve the problem of the classic church façade and interior with a serene finality quite uncharacteristic of Venice. But Palladio



The Farnese palace in Rome (1534) by Sangallo and Michelangelo was the model for the Reform Club in London



Palladio's Basilica at Vicenza (1549) breathes the very spirit of ancient Rome

was a poet too. The basilica at Vicenza breathes the spirit of antiquity as Alberti had struggled to do, and his columned palaces, and the lovely symmetrical villas he built in the country around, demonstrated for the first time the poignancy of a Roman portico in a green

The Villa Rotunda (1558), the most perfect of Palladio's country houses, was copied by three English eighteenth-century architects



landscape. Two hundred years later, the English aristocracy were to find the combination quite irresistible, and we shall find far more and better examples of correct Roman architecture in Britain than were ever built in Rome itself.

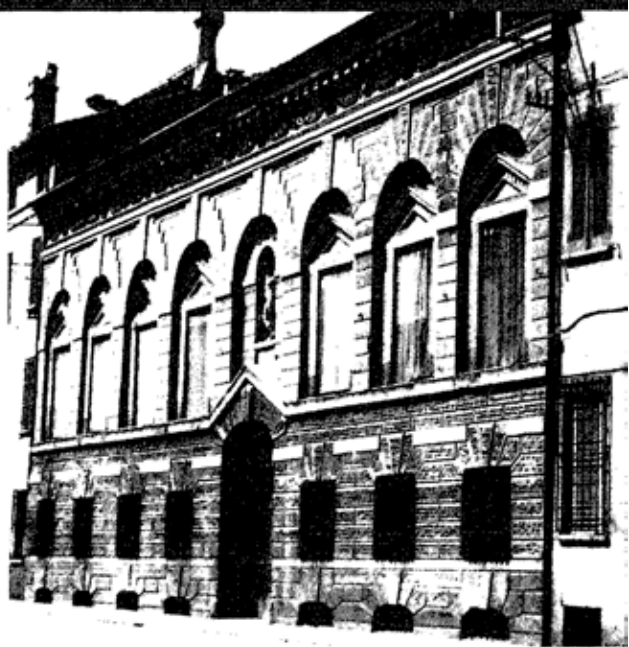
2. MANNERIST

Romans of this rich and ruthless age could hardly have been expected to be satisfied for long with the severely limited ideas of their remote and less imaginative ancestors. It was not in the nature of an introspective genius like Michelangelo to play by the rules. So we find a strange and alluring tendency to turn them upside down, to place columns where they carry no load, or to crowd them together, or support them on brackets, or cut into them with rustications, to leave out parts of cornices, cut off the bottoms of arches, play games with keystones and window surrounds. This is a sophisticated business, depending for its point on a thorough knowledge of the rules you break. In the hands of an artist of impeccable taste like Giulio Romano, or of a witty English romantic like Lutyens, it produced a small number of buildings of immense charm. Elsewhere, particularly in Venice, it led to architecture of a sickening vulgarity which the Victorians and Edwardians copied with gusto.

3. BAROQUE

The difference between Mannerist and Baroque architecture is that one was a free manipulation of the

Giulio Romano's town house at Vicenza (1544) has a sophisticated Mannerist façade



Orders and the other was a free manipulation of the real elements of building—walls and roofs and the space they define. Baroque architects had no patience either with the Vitruvian rules or with the little game of breaking them. They used columns and cornices in a perfunctory way as mere tools, while they exploited two discoveries of the early and high Renaissance : perspective and the sculptural shaping of walls. It is significant that the first master of the Baroque, Bernini, was himself a sculptor, but the fascinating thing is that he was a sculptor as interested in interior space as in exterior form. The converging walls and roof of his theatrical Scala Regia in the Vatican exploit the illusion of diminishing perspective as subtly as the Parthenon exploits the eye's reaction to solid objects, and his huge



Baroque grasp of space: Bernini's colonnades seen from the dome of St Peter's, Rome (1656)

colonnades framing St Peter's carry the same idea into the open air, with far-reaching consequences. This is the solid realisation of the discoveries of painters like Masaccio and Uccello. Strangely enough, the first experiment in illusionist architecture had been made by the impeccable Bramante, and so had the first steps towards the sculptured wall. But in Borromini's magical little churches of San Carlo and Sant Ivo we find this freedom to mould and manipulate solid masonry like clay developed into a lilting undulating movement for which music is the only analogy. Inside are exhilarating oval domes and waving cornices. There is a sense of a wild thaw and life on the move again.

Roman Baroque was frankly theatrical. It was the architectural language of the Counter-Reformation and the struggle to bring people back to the Mass ; which takes us beyond the Reformation itself. It is time to head back for the north.

In France and England the sixteenth century was the age in which each nation, united and consolidated by strong rulers, broke away from Rome, fought out and settled the issue of religion, and became intensely conscious of its individuality and its power. As you would expect, both countries in that century had too

The waving
baroque wall :
Borromini's
church of San
Carlo, Rome
(1633)





strong an eye of their own for building merely to learn meekly the new Roman discipline. They sent for Italian artists and craftsmen, and employed them to decorate their new country houses, rather as a modern business man might modernise his office, but without any understanding of what modern design was all about. The results were often extraordinarily vulgar. The Orders (sometimes all five) were superimposed over front doors in tiers fussy in detail and provincial in scale. Chimney-pieces were ponderous and elaborate, ceilings loaded with 'strap-work' decoration invented in Flanders. But they were not always so. In France



The gateway at Anet (1552) *opposite* and the bridge-castle of Chenonceau (1557) *above*, both by Philibert de l'Orme, are typical of the first flush of the French Renaissance

an original genius like Philibert de L'Orme produced by some magic, in the gateway at Anet and the dream-like bridge-castle at Chenonceau, works as fresh as anything by Brunelleschi, but entirely un-Italian. And in England the E-shaped Tudor manor-house kept up its own anonymous tradition, still basically Perpendicular Gothic, as we can see in houses like Montacute and Hardwick Hall ('more glass than wall') both built at the very end of the century, when Palladio had been dead for twenty years.

Now for the first time in history the house, and not the church, sets the pace of experiment. A new nobility, grown rich in France by royal favour and in England



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Montacute in Somerset shows how even in 1599 English architecture was still firmly Tudor

by monastic loot, and a new merchant class grown even richer by the expansion of trade across the world, were ready to try anything once, and had not yet been brought to heel by eminent architects and their superior ideas. Houses, literally of all shapes and sizes, sprang up in town and country, some elaborately timbered and gabled with all the traditional skill of the medieval carpenter, some grey and square round cobbled courts. Some, like Chambord and Wollaton and Burghley and the Scottish castles copied from France, were still castellated and turreted and fancifully chimneyed to a fairy-tale silhouette. Others, like Longleat and Hatfield and Bramshill, achieved a quiet horizontal line and discipline all the more admirable because not learnt by rote. It was the last fling of the anonymous craftsman in the eccentric north before the advent of the Rule of Taste.



Longleat (1570) *above*
and Burghley (1585) *left*
show Elizabethan archi-
tecture at its most
restrained and most
eccentric



The Place des Vosges, Paris (1605) *left*, and the château of Balleroy in Normandy (1626) *below* are characteristic of French Mannerism





Gabriel's *Petit Trianon* (1765) at Versailles is a perfect example of the French eighteenth century

This phenomenon happened in different ways in each country. The French imported Serlio and his rule-book, but a series of architects of marked individuality¹ were much more attracted by the strange liberties being taken by contemporary Italian architects, and developed a Mannerist touch of their own, full of French wit and elegance, of which the chateaux of Balleroy in Normandy and of Blois on the Loire are typical. They also pioneered, in the Place des Vosges and the later Place Vendôme, what we now call the terrace house, and created those two great Paris squares which were to be so widely influential in England. So that when Louis XIV decided that a State style was necessary for the completion of the Tuileries and the vast new palace at Versailles, he proudly rejected Bernini's recommendations and used his own designers. By the eighteenth century this style had settled into the tasteful but slightly precious classicism we can see in Gabriel's Little Trianon

¹ De Brosse, François Mansart, Le Vau

(clipped avenue, geometrical flower beds, formal steps, Corinthian pilasters), relieved indoors by the new 'rococo' interior decoration, with its deftly skating C-shapes in plaster and its feminine pastel shades.

No Englishman would say that in Italy, Spain or Germany the Rule of Taste ever established itself. In Rome, Turin and Naples Baroque experiment with space continued unabated into the eighteenth century. Spain, after a brief Mannerist phase in the Giulio Romano fashion, went quite mad for decoration and exported to Latin America a silver-smith's style called *plateresque*. Germany, conversely, after a jolly riot of what we would call Jacobean, suddenly produced in the early eighteenth century a group of designers of genius,¹ who seized on Borromini's ideas of undulating walls and dramatic recession of space and created in the pilgrimage churches of Wies and Vierzehnheiligen and the palaces of Würzburg and Bruchsal a dream architecture, intellectual yet sensual, flooded with light and colour and so complex in form that one feels that it must have been modelled rather than drawn. It was the final apotheosis of the Baroque, and it filled central Europe with gaiety just as the west settled down to be serious.

And so we come to the Netherlands and Britain, closely related. The Netherlands, cross-roads of many influences, after the usual early excesses, developed a decent red-brick Palladianism which later, crossing the Channel with William and Mary, gave birth to what the British think of as the typical Georgian house, and the

¹ The Asam brothers, Neumann, Fischer von Erlach



Bavarian baroque is at its most colourful and complex in Neumann's church of the Fourteen Saints (1750) at Vierzeñheiligen



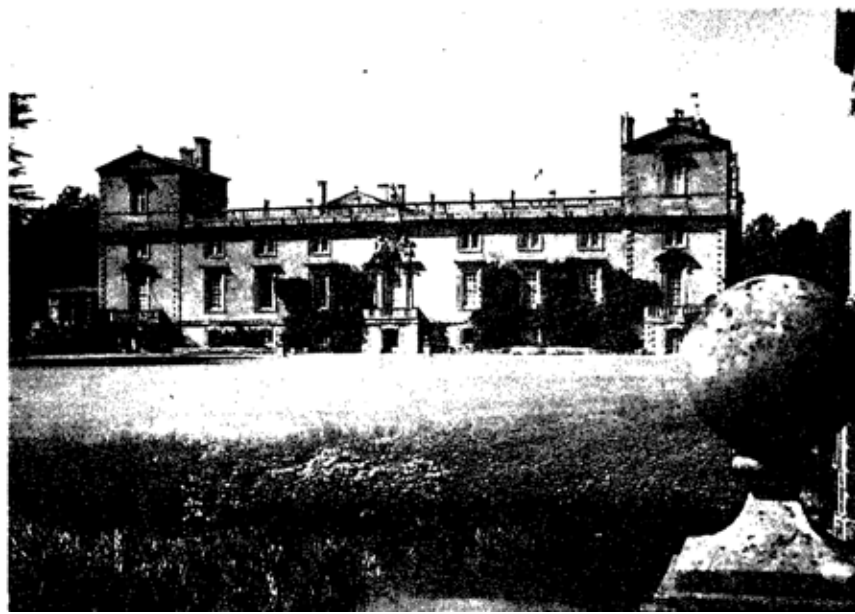
The Mauritshuis at the Hague (1633) shows the kind of architecture William and Mary brought to England

Americans as the typical Colonial. In England, Roman correctness arrived with dramatic suddenness in the work of a single man, Inigo Jones, nine years younger than Shakespeare, the first Englishman to travel in Italy with Palladio's book in his pocket and a firm resolve to learn the architectural grammar of ancient Rome and not to be deflected by contemporary aberrations. 'Architecture,' he noted, 'ought to be solid, proportionable according to the rules, masculine and unaffected.' It was the start of a new age, an age of great names and restless activity.

At first Inigo Jones was an isolated portent. Few people saw his austere Palladian 'Queen's House' at Greenwich, and the Banqueting House in Whitehall,

first stage of an unrealised Renaissance palace, stood up alone and square above the roofs of Tudor London for many years. Even his beautiful work at Wilton House near Salisbury had the sort of personal uncopiable touch we saw in the chateaux of François Mansart. But then came the Civil War and the Restoration and the Fire of London, and a vast new building programme for Court, Church and City. The need coincided with the appearance in England of a group of men as serene and self-confident as the Florentines, among them the brilliant mathematician, Christopher Wren. Wren had seen all the latest work in France, yet calmly resisted its influence, and when he became Surveyor General firmly took his inspiration from Italy, where he had

Wilton House (1650) is an example of the 'masculine and unaffected' architecture of Inigo Jones





The west front of St Paul's, built just before and after 1700, owes something to Inigo Jones and something to Borromini

never been. In his masterpiece, St Paul's, Bramante's influence is obvious in the great dome and Borromini's in the western towers, and in all his city churches and university work the touch is Italian rather than French.¹ By the end of the seventeenth century English architects had worked in their imaginations through the whole story of the Renaissance, and Wren's successors, Hawksmoor, Vanbrugh and Archer, had developed a Baroque of their own, strong, square and almost savagely monumental. There are no pretty curves at Blenheim or Seaton Delaval, but the piling up of great abstract

¹ The exception is Hampton Court, a compendium of France and Holland.

English Baroque is splendidly exemplified by Vanbrugh's stable block at Blenheim (1708)

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masses of masonry, deeply Roman in spirit but contemptuous of the superficial Roman trappings of Christopher Wren.

Then came reaction. Wren's backslidings towards the Baroque and Vanbrugh's revel in it were condemned by the young Whigs as High Church and corrupt. 'Back to Inigo Jones!' was the cry. Led by the rich and clever Lord Burlington and his protégé William Kent the Whig aristocracy unanimously assumed the

Stourhead (1722) shows the English return to 'correct' Palladian proportions

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London terrace housing of the
seventeenth and eighteenth cen-
turies in King's Bench Walk (1678)
left and Bedford Square (1774)
below



rather frigid garments of Palladio. His books were republished, his Vicenza villas studied and copied, and all over Britain there rose great square houses with correct porticos and symmetrical wings and cold columned halls.

Thus it was that the Rule of Taste was at last imposed in England, not by royal decree, but by a ruling caste, while far and wide the builders set to work. London, to begin with, had been rebuilt, more or less on the old street pattern (missing, as after 1945, the chance to bring in the latest planning ideas) but with the kind of smooth sash-windowed houses we can still see in Queen Anne's Gate and the Inns of Court. Country towns followed suit, refronting their gabled and cobbled streets, while squire and rector put up Dutch-style pedimented houses. Then came the speculator with his terraces and squares. Inigo Jones had built at Covent Garden a passable copy of the Place des Vosges, and soon England, France and Italy were vying with one another in the design of these beautiful outdoor rooms, sometimes opening one into another like the state rooms in a palace (Nancy), sometimes subtly irregular (Venice), sometimes circular and linked by avenues like the rides in a French forest (Rome and Paris), sometimes boldly facing space and sun like the Place de la Concorde and the Royal Crescent at Bath. The placing of a great group of buildings in unlimited space, demonstrated at Versailles, was copied all over Europe, but only in Britain was this grip over a whole townscape exercised not as a manifestation of imperial power but as a way of housing the



In the Piazza San Marco at Venice we see the ' outdoor room ' at its loveliest and most sophisticated



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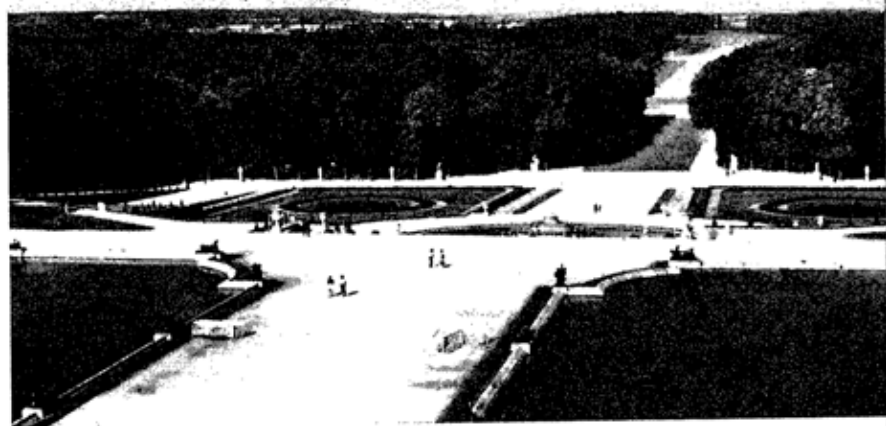
In Lansdowne Terrace, Bath (1794) the terrace house becomes part of a winding 'superblock' embracing sky and green space

middle classes. It was finally brought to perfection by the free sweeping curves of Lansdowne Terrace at Bath and Nash's classic necklace round Regent's Park. But it went right down the social scale to the workman's one-up-and-one-down cottage. At all levels geometry was the rule. From the air the firm Georgian criss-cross contrasts strongly with the loose wiggles of modern suburbia.

These loose wiggles in fact remotely descend from one of the few pure inventions of this age of revivals : the Georgian landscape garden. Until this moment,

gardens had always been a geometrical extension of the house. In Italy these 'architectural' gardens, with their ilexes and steps and statues, had been as sophisticated as the house itself, and in France this same formality had been carried by immense clipped avenues right out to the horizon. On all this Latin grandeur English writers and poets suddenly declared a war of independence. Away with avenues and clipped yews and geometrical flower-beds ! 'Gardens are works of art, therefore they rise in value according to the degree of their resemblance to Nature,' wrote Addison. Soon William Kent, it was said, 'leapt the fence and saw that all Nature was a garden'. And so we get the cool Palladian mansion in its turfed park, with deer and sheep grazing among 'natural' clumps of woodland and a 'natural' lake beyond. It was like, it was deliberately like, a picture by Claude or Poussin and so they called it *picturesque*. In our day, matured and bosky, all lowland Britain, with its winding hedges and great single trees and little free-shaped woodlands, seems to foreigners 'like a garden'.

Meanwhile among the architects the Battle of the Styles was far from over, indeed was only beginning. For a time around the mid-century, with the mature work of Gibbs (St Martin-in-the-Fields) and Chambers (Somerset House) and their followers in Dublin and Edinburgh, it may have looked as if an academic British style, eminently suitable for world-wide export, had established itself. But below the surface disturbing currents were running. Archaeology was beginning to



above At Versailles the garden is a geometrical extension of the house as far as the horizon

below Poussin's *The Ashes of Phocion* (1648) was the sort of picture that inspired the English 'picturesque' park

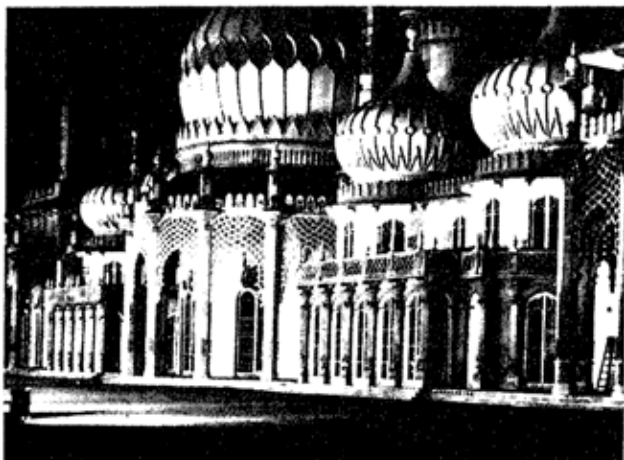


open up Greece as well as Italy, and to show that antique architecture was not a single simple thing codified by Vitruvius and Palladio, but a succession of different styles available for revival. Soufflot in France led the way back to pure Roman (unfiltered by the Renaissance) and Schinkel in Germany back to pure Greek. And in England the so-called Romantic movement in literature (not that romanticism was anything new in the British character) made people intensely conscious of the *associations* of buildings and less fussy about their *aesthetics*. 'What does it make you think of?' one asked, instead of 'Is it good?' The Picturesque movement in landscape was obviously a sign of it; toying with Gothic was another. Gothic had never really died in England.¹ No sooner had the last Jacobean manor house been built than Wren, followed by Hawksmoor and Vanbrugh and even the arch-Palladian Kent, allowed themselves the occasional Gothic excursion. But the real fashion for Gothic decoration, like the Picturesque, was created by a writer, Horace Walpole, with his rambling house at Strawberry Hill, Twickenham (the first non-symmetrical house since the Tudors). Nor was this all. Englishmen were beginning to see the whole world as a store-house of amusing ideas. The academic Sir William Chambers, on the strength of a brief call at a Chinese port, wrote a rather lightweight treatise on Chinese Gardening, and numbers of retired Anglo-Indians brought back sketches, not of the solemn Buddhist and Hindu temples which

¹ Compare the statement on p. 46 about Romanesque in Italy.



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Sir Horace Walpole's 'Gothick' Strawberry Hill (1750) *above* led the English fashion for exotic styles of which Nash's Brighton Pavilion (1818) *below* is a famous example



The interiors at Syon House, Middlesex (1762) are among the finest examples of Robert Adam's Roman manner

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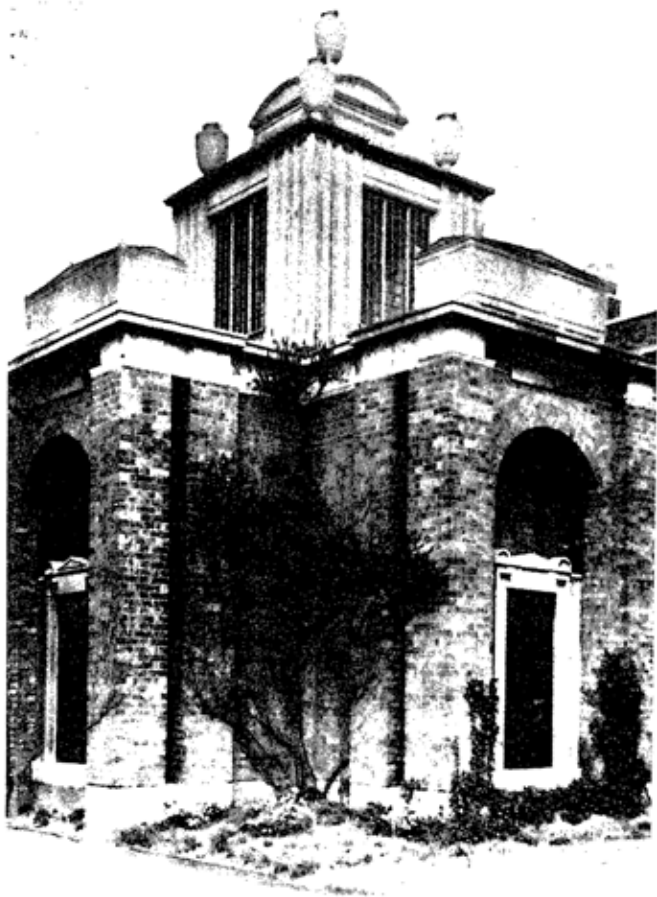
they failed to find, but of the dazzling and quite recent monuments of Mogul India, such as the Taj Mahal—the last and remotest descendants of the domed architecture of the Near East. Very soon pattern-books were available giving designs for summer houses and sham ruins in the Gothic, Chinese, Indian, Egyptian, Greek and Moorish, not to mention Roman, styles. It was all great fun.

Serious architects made it their business to tread delicately among these fripperies, keeping within the bounds of good taste. Of these *eclectics*, as they must accurately be called, Robert Adam was the leader, a



Nash's stucco Ionic at Cumberland Terrace, London (1827)

man of immense erudition and discrimination, and the first to popularise the elegant neo-classic style which was later to be taken up by lesser men like Holland, Wyatt and Nash. In and around London (Syon, Osterley, Kenwood, etc.) magnificent examples luckily survive of his whole range of thought from masculine Roman to feminine Pompeian. He was the last architect whose Roman manner was both scholarly and personal. With Wyatt and Nash personal conviction gives way to extreme cleverness and versatility. The skin-deep palaces surrounding Regent's Park, the Gothic fantasies of Fonthill, the Indian Pavilion at Brighton, the toy castles, the thatched cottages, the stucco Italianate villas of the new suburbia—these were



The mausoleum at Dulwich (1812) shows Soane's severe and personal touch

all stage-sets, Picturesque certainly, beautiful even, but in the eyes of the next generation, damned.

There was just a possibility that by discarding all this stylistic whimsy and getting right back to Vanbrugh's abstract monumentality a new architecture of pure geometry might emerge, and two lonely and difficult geniuses, Ledoux in France and Soane in England, attempted the task. But they had no followers, and architecture settled into the dry and pompous neo-Greek of the French Empire and the cut-price but often charming British equivalent that we now call Regency. Only in the great coloured palaces of old St Petersburg does one escape this tired feeling of the end of an era.

There then occurred in England a movement in some ways parallel to the revival of Roman architecture in fifteenth-century Florence. This was the Gothic revival. Like the early Renaissance, eighteenth-century Gothic had been first of all a literary and poetic movement. Gothic had been a kind of scenery, first quaint (Strawberry Hill), then romantic (Fonthill), but not really understood either as a style or as a structural system. The Alberti of the Gothic Revival was Augustus Welby Pugin, who burnt up a short life in the intense study and propagation of the real spirit of Gothic architecture. If you compare the flimsy design of St Luke's Church in Chelsea with the strongly sculpted and imaginative outline of the Houses of Parliament (not its plan, which is by a classical architect called Barry) you can see what Pugin achieved. And his enthusiasm fired the imagina-



Anaemic Gothic of
1822 : St Luke's Church,
London

tion of the leaders of the High Church Oxford Movement, until all over England churches were being built or rebuilt in a correct version, not of Perpendicular as hitherto, which was felt to be mechanical and debased, but of Decorated, which was considered the peak of the style. (Gilbert Scott alone was concerned with 39 cathedrals and 476 churches, and was the first mass-production architect.) Soon the movement had its Mannerists, like Butterfield, a lonely man who hated the whole Rule of Taste and whose 'streaky-bacon' style is both the ugliest and the most individual of his century. And in Viollet-le-Duc in France the movement produced its Serlio, a devoted researcher into the structural and decorative principles of Gothic building, though no designer.

But earnest though these people were, and rose-tinted

Full-blooded Gothic of
1868 : Manchester Town
Hall



Butterfield's personal Gothic at Keble College, Oxford
(1870)



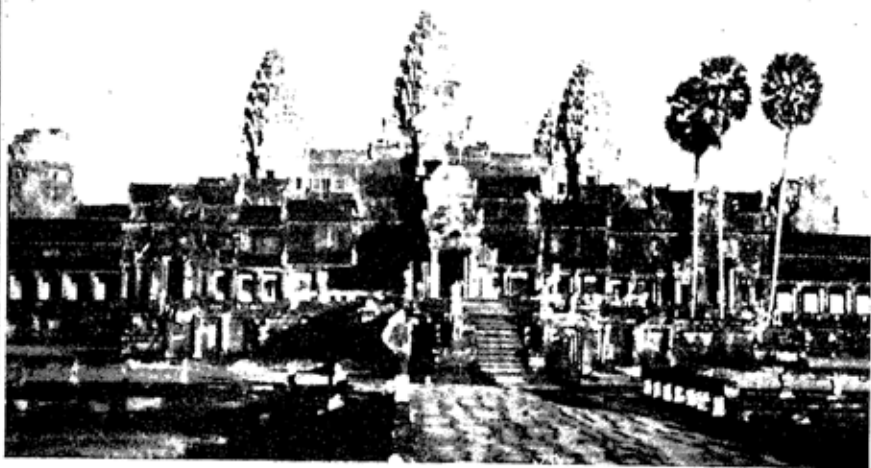
the spectacles through which they looked back (like the Palladians) at the noble qualities of their own Golden Age, the comparison between them and the giants of the Renaissance only fits their ideals, not their performance. The great flaw in their argument was that whereas Roman detail had been mass-produced by slaves, and could be copied mechanically, Gothic detail had been individually created by craftsmen and could not. Walpole's stucco Gothic was not more shocking to Pugin than Scott's machine-made Gothic to the great critic John Ruskin. It seemed nothing short of tragic that a style so 'natural', so 'structurally honest', so 'true to material', should be churned out of factories by the yard. All that could be said, as the hugely rich and productive century wore on, was that while the 'classicists' sank deeper and deeper into the mire of stodgy *pompier* architecture (as the French called it), the 'Gothicists' were at least conscious of the need for a new spirit worthy of the new technology. Meanwhile, as successful architects and fashionable critics argued in their ivory towers, as Scott and Street and Waterhouse put up elaborate (and, in their now blackened state, impressive) town halls and clubs and schools and hotels, as country gentlemen erected mansions first neo-Gothic, then neo-Elizabethan, then neo-Queen Anne, ordinary people swarmed and suffered unheeded in the teeming slums and factories of the palaeotechnic age.

CHAPTER 4 : *Third Flowering*

THE world now seemed irretrievably split in two. One half still used the technology that had served the human race since the dawn of history. In Asia and Africa white oxen still slowly, slowly dragged carts or ploughs, and houses were still built of beautifully wrought mud or carpentry, as the case might be. In Japan and in India the traditional domestic arts had reached by now a high degree of sophistication. The Japanese had perfected a timber-framed house of extreme simplicity and *chic*, opening through paper screens into a garden whose every twig and pebble was meticulously controlled. The princes of India still sat on their peacock thrones in domed palaces of intricate white marble inlaid with little mirrors and semi-precious stones, or walked fully clothed down wide stone steps into great artificial lakes. At Peking and at Angkor rose complex symmetrical palaces and sculptured temples beside which Versailles and Blenheim¹ seem almost artless. But the pace of life and the tools of life were those of the Romans, and nothing had happened to disturb them.

The other half of the world, where clever and ambitious Westerners were in command, was changing completely. Nothing could stop the inventors. 'Bliss

¹ which Angkor Vat strangely resembles



Fresh winds from the East :

above

Twelfth-century Angkor Wat, the immense symmetrical temple found buried in the Cambodian jungle in 1860



left

Seventeenth-century Mogul architecture of the Indian plains : the white marble Pearl mosque at Agra

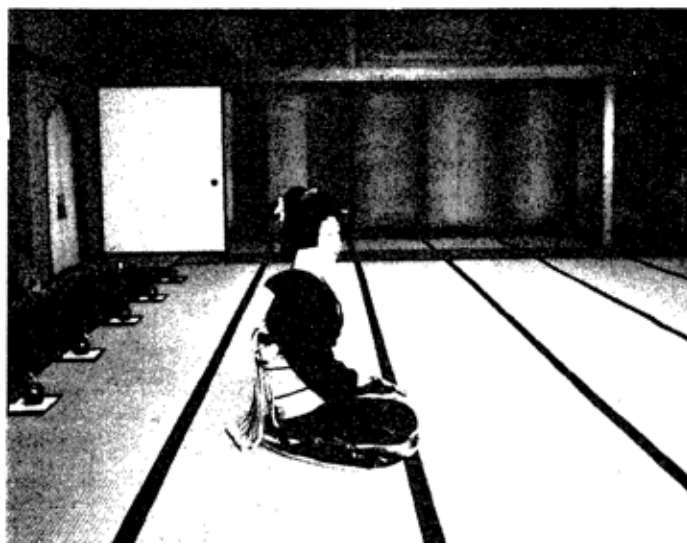
opposite

The timeless Japanese interior



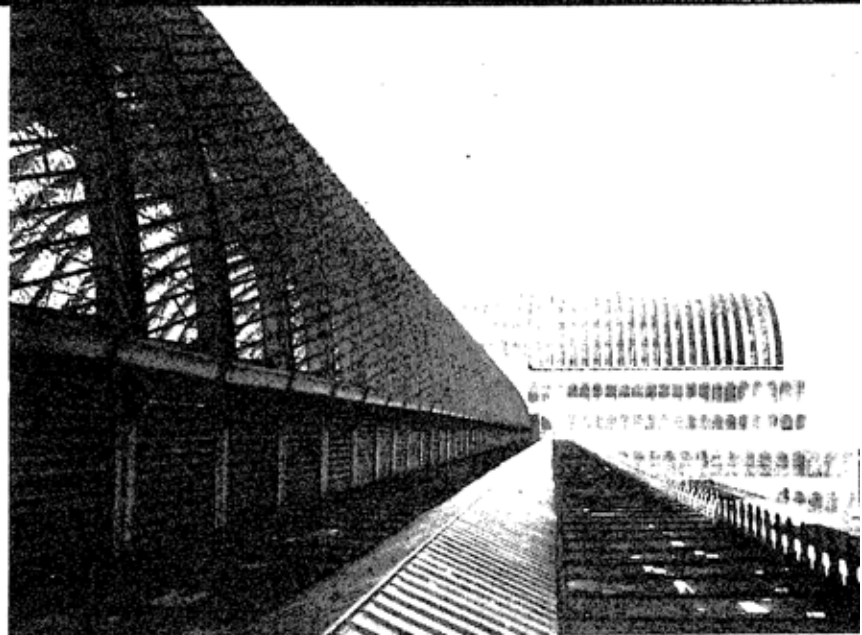
was it in that dawn to be alive.' Yet while engineers astonished the world with one staggering device after another, architects to their dismay had nothing new to propose, and were rapidly becoming mere middlemen, purveyors of other people's ideas. Even the Americans, so go-ahead in every other sphere, had nothing better to offer their clients than neo-classic styles painstakingly acquired in Paris or the '57 varieties'¹ of villa copied third-hand from Nash or Repton. The causes were obvious: too much history; too many alternatives; too many new rich trying to catch up. The cure was obvious too. 'The great question is, are we to have an architecture of our period, a distinct, individual palpable style of the nineteenth century?' In asking it, the speaker at the inauguration of the Architectural Association in 1847 knew the difficulty, in so self-conscious an age, of finding

¹ The phrase adopted by Frank Lloyd Wright



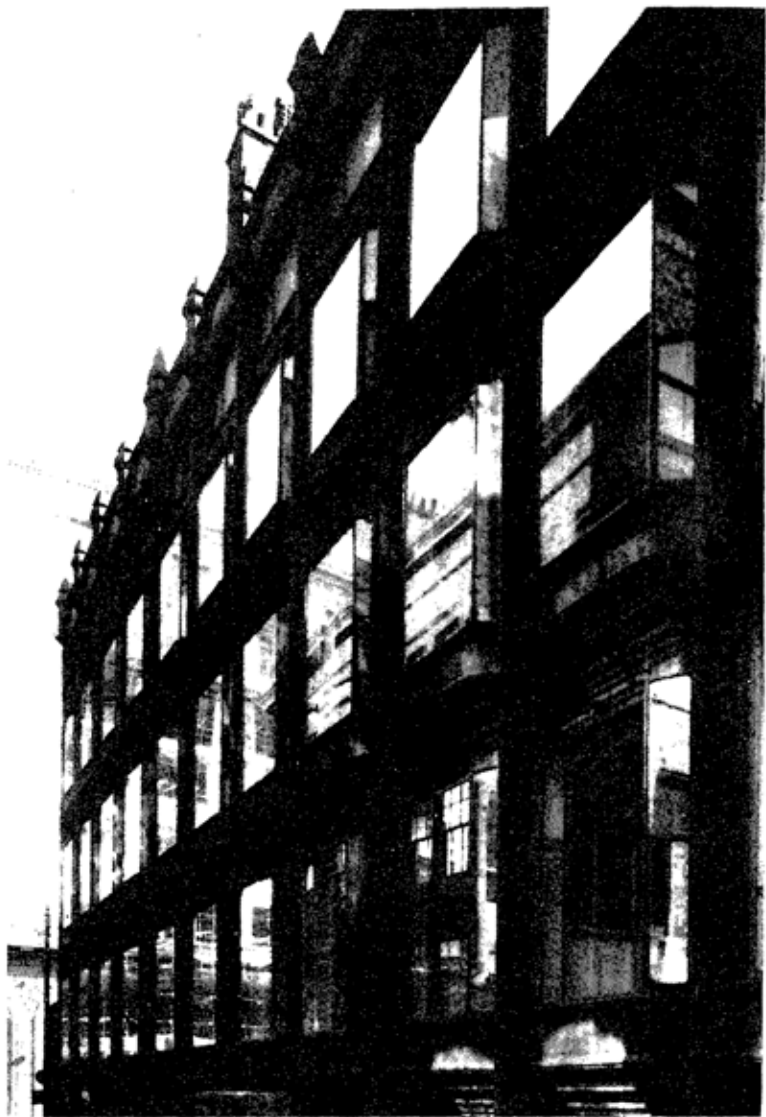
an answer ; and it was half a century, during which the old world and the new co-existed on very unfriendly terms, before even a few people could clearly discern it.

There were three strands, and the problem was to plait them together. The first and most dramatic was the new iron-and-glass engineering. Since the first iron bridge at Coalbrookdale (contemporary with Somerset House) cast-iron had made great strides, and Regency architects had even cast Greek Doric columns in it, as well as using it all over Brighton and Cheltenham for balconies and railings. But the engineers were miles ahead. In 1801 Telford had designed a single-span London Bridge in iron, and in the thirties Brunel had thrown his breathtaking suspension bridge across the Avon gorge at Clifton. Next came iron domes and vaults and greenhouses, in which the French pioneered, culminating in the Crystal Palace of 1851, in which Queen Victoria's gardener Paxton achieved the greenhouse to end all greenhouses. Was this architecture ? Cultured people did not think so, and fifty years later Max Beerbohm would lower the blinds as his train approached Sydenham. But for the engineers it was a break-through. The Paris Exhibitions which followed one another at about ten-year intervals were a new opportunity to put up experimental prefabricated buildings which could be written off as temporary, and many fine ones were, including the colossal Gallery of Machines, contemporary of the Eiffel Tower, with double the span of St Pancras station and no Gothic frontispiece to hide it, almost certainly the masterpiece of the age.



The iron and glass Crystal Palace in London (1851) was a mid-Victorian break-through and an early example of complete pre-fabrication

If it could be done for roofs, it could be done for walls. By the seventies, scattered about the world and unknown to the academies of architecture—a book-stack in Paris, a warehouse in St Louis, an office building in Liverpool, a department store in Chicago—buildings had begun to appear which exploited the elegance and transparency of steel and glass as completely as the Gothic cathedrals the thrust and counter-thrust of rib and buttress. They were unrecognised for the simple reason that nobody could tell that that was the way things would go. There were other people in the hunt.



Oriel Chambers, Liverpool (1864) is a superb Victorian fusion of plate glass and Gothic detail



The Carson Pirie Scott office-building of 1899 in Chicago still looks modern in 1963

The second strand in the rope was the English Arts and Crafts movement, a very different affair. Like the Gothic Revival, this was an example of what has been called the 'Ethical Fallacy'—that art has something to do with morals. To John Ruskin Gothic was honest, Renaissance dishonest, and to William Morris the whole machine of civilisation and its fancy products were corrupt and soul-destroying. 'Have nothing in your house that you do not know to be useful or believe to be beautiful.' His own red-brick house at Bexley Heath was the first of a long line of oak-beamed, deep-eaved, cottage-loaf dwellings in which for a hundred years the British were to hide from the industrial age they had themselves created. To Morris and his followers 'the true root and basis of all art lies in the handicrafts', and in Surrey cottages and Cotswold villages they struggled

to get back, back to the innocence of the medieval craftsman.

If this had been the whole story, it would have been a pathetic one. But the search for simplicity and fitness for purpose bore fruit. The very phrase 'superfluous ornament' was to become one of the slogans of the modern movement. 'Ornament,' Adolf Loos was to proclaim, 'is crime.'

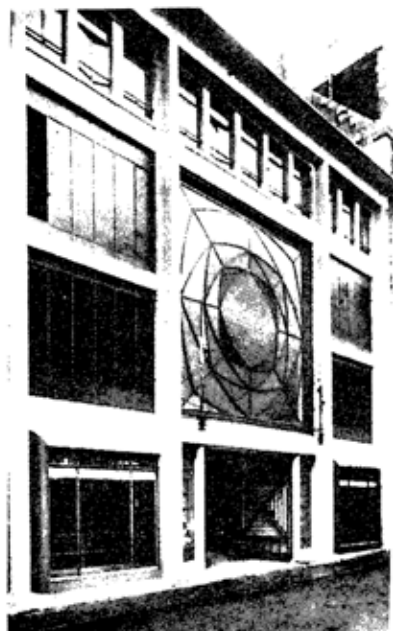
But to make a strong rope, a third strand, continental 'futurism', had to be allied to British 'pastism' and to the discoveries of the engineers. It was necessary to believe passionately in the new world and in the possibility of forging a new architecture. It was not necessary to succeed. Viollet-le-Duc's and Horta's essays in arty ironwork and the brief episode known as 'Art Nouveau' (still commemorated by the entrances to some of the Paris Metros) had a wilting lisping accent quite unsuitable for the march into a new century. Yet strangely enough the 'decadent' nineties witnessed all over the Western world the unmistakable tautening of the rope. In Britain designers like Voysey, Mackintosh and Lethaby felt their way towards an architecture entirely free of the past. Voysey's plain white gabled houses with their early Heal furniture started a fashion you can still see running to seed in subtopia. And in the famous Glasgow Art School Mackintosh produced Art Nouveau's one outstanding success, which had a wide influence in Europe—though next to none in England. Simultaneously, far away in Chicago, an extraordinary flowering of skyscraper design took place: the

steel-framed office block sprang fully armed out of the head of Louis Sullivan, never to be bettered to this day. Beside the Carson Pirie Scott building everything coming along in Europe must have looked affected and immature.

It was slightly too good to be true. Both in America and in England the Edwardian age was one of reaction. Skyscrapers went Gothic, only to emerge again into grandeur with the Rockefeller Centre. Banks and schools and public buildings stayed firmly neo-classic.



Mackintosh's Glasgow Art School (1898) was one of the pioneers of *Art Nouveau* and of the new architecture



Perret in France was one of the first to make unadorned concrete the basis of his architecture, as in this garage of 1905

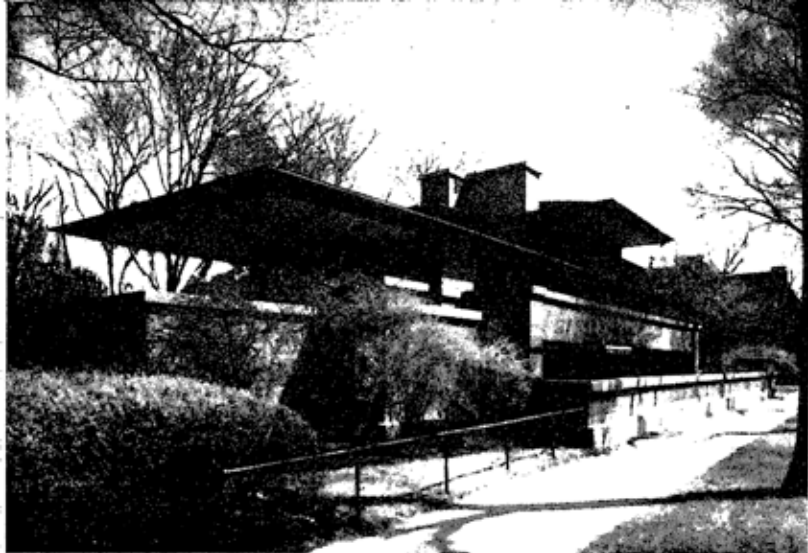
In England Lutyens, after a brief homespun period of incomparable charm, led a naughty party back into classical Mannerism. Selfridge's was built, Buckingham Palace refronted, and the new steel frames weighed down with pilasters and entablatures and stone fruit. Ladylike neo-Georgian houses appeared everywhere.

But on the Continent the lesson had been learnt and the movement stayed alive. By the time World War I came to put a stopper on everything, Perret in France had built his first severe essays in the naked use of another new material—concrete reinforced with steel bars to counteract its weakness in tension and give it the characteristics of a beam. And in Germany Behrens

and Gropius had built the finest factories since the stone mills of the north of England : the most famous a tobacco factory transparently encased in steel and glass, datable, you would say, 1935. Even in the booming and philistine American middle-west, one man, Frank Lloyd Wright, was allowed the chance to build the first of his free-plan houses with their long low planes of roof and balcony and their Japanese interplay between house and garden. His discovery—that plate glass made it possible for the old boundaries between indoors and out to vanish completely—was the twentieth-century equivalent of Kent's abolition of the frontier between the garden and the landscape beyond. It was a sign that a new sense of space had arrived in the world.

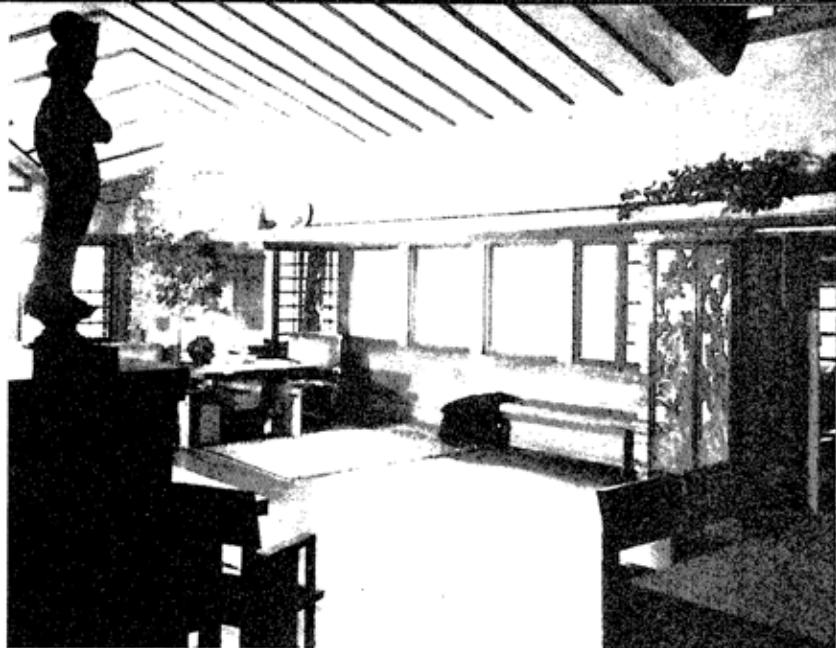
A factory by Gropius (1911)
which was a generation
ahead of its time





Two houses by Frank Lloyd Wright (*above* 1909 and *opposite* 1925) showing his leaping horizontal line and free use of internal space. (See also Frontispiece)

It was really a new way of seeing. The cathedral builders had thought of their works as constructions, but they did not stand back and see them as objects in a townscape or bother their heads about the visual relationship of one building with another. They got their effects, as town builders had in all primitive countries, by doing what came naturally and tackling each situation as it arose. The architects of the Renaissance, and particularly the Baroque, were much more sophisticated. Construction they took as a matter of course, but they were intensely interested in the shape of buildings as pieces of three-dimensional geometry, and in their relationship with one another. In this they were guided by the laws of perspective discovered by the painters, and since in a picture the



viewer is tied to one viewpoint, their townscapes and landscapes were composed to be seen from one viewpoint, and their buildings were thought of as solid objects occupying their appointed places in the picture. But now the painters had moved on. Picasso and Braque had begun to draw heads and still-lives from several viewpoints at once, and to convey on canvas not what the static camera's single eye sees, but what the moving and intelligent human apprehension knows is really there. Objects in their pictures become simultaneously more solid and more transparent, simultaneously real yet ambiguous.

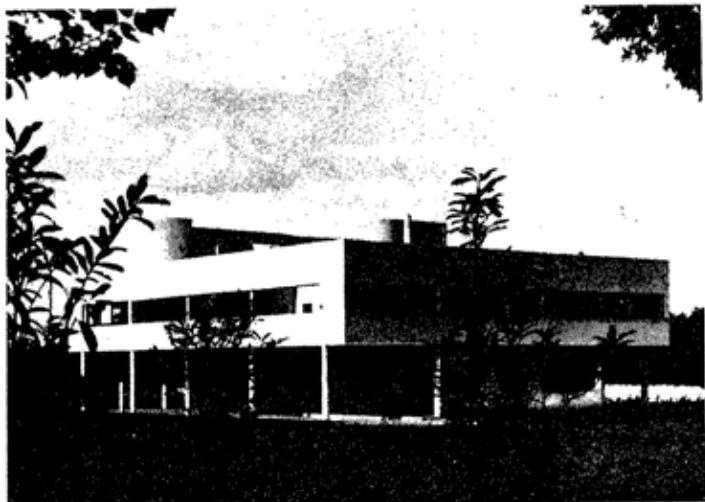
For architects this was pure liberation. A building need no longer be a solid box with holes in it, dressable like a doll in any one of a set of styles. The whole long

story of styles seemed suddenly meaningless and finished. 'The time is here,' said Frank Lloyd Wright, 'for architecture to recognise its own nature, to realise that it is for life as it is now lived, a humane and therefore an intensely human thing. It rejects all grandomania, every building that would stand in arbitrary fashion, heels together, eyes front, something on the right hand and something on the left hand.' The symmetrical house with its square rooms and doors and chimney-pieces dissolves in his hands into a sequence of informal spaces, stopped or deflected here and there by a thick wall, defined by a low ceiling, flowing on into open air through sliding screens of plate glass, 'loving the ground', relaxed.

The years 1925 to 1930 were the classic period of modern architecture. In those years Le Corbusier, who had studied with Behrens and Perret and was himself a brilliant abstract painter, suddenly appeared as the Rousseau of the new movement. 'The Engineers overwhelm with their calculations our expiring architecture . . . they fabricate the tools of our time, everything, that is, except our houses and our moth-eaten boudoirs.' In those years the first 'modern' houses appeared, perched delicately like great white birds on the muddy fields of the Île de France. Their structures were steel cages, so that their walls could be mere screens, pure white inside and out, or plate glass in black metal frames. This gave the designer freedom to place and modulate his paper-thin walls as subtly as in any painting by Klee or Mondrian. Ramps dissolved



Two of Le Corbusier's revolutionary white concrete houses
(*above* 1927 and *below* 1929)



one level into another, and space, no longer rationed and parcelled and labelled, flowed freely in and out. The result could be a building of impeccable glamour and elegance like Le Corbusier's Swiss pavilion or Mies van der Rohe's Tugendhat house. But such purity of style trembled on the edge of preciousity, since an interior in which a misplaced newspaper spoils the effect is anti-human. Not that this extreme aestheticism was acknowledged. Mies claimed that he was a mere builder, and that his architecture was 'almost nothing'.

But in the arts as in most other things you no sooner reach a moment of poise than people begin to diverge. A tree that had as many roots as modern architecture was bound before long to sprout branches. One was

The interior of the Tugendhat house (1930) by Mies Van der Rohe for contrast with the Wright interior (p. 97) of about the same date

Collection Museum of Modern Art



Miesian architecture in
London
(Castrol House 1960)



Frank Lloyd Wright, out in the sun with his apprentices, proclaiming his personal 'Declaration of Independence' against history, styles, rules of proportion, mechanised city life and the whole European racket beyond his wide prairie horizon. There was a good deal of William Morris in all this, but without the hopeless medieval nostalgia.

Then there were the purists, led during World War I by the only people that had been able to keep going, the 'de Stijl' group in neutral Holland, but now centred on Berlin and dominated by Gropius and Mies. Theirs was the pure white concrete and glass style made familiar as 'Modernismus' by English neo-Georgians

—who hated it, among other things, because it was German. Their school of design, the Bauhaus, was the power-house of the new current running through Europe.

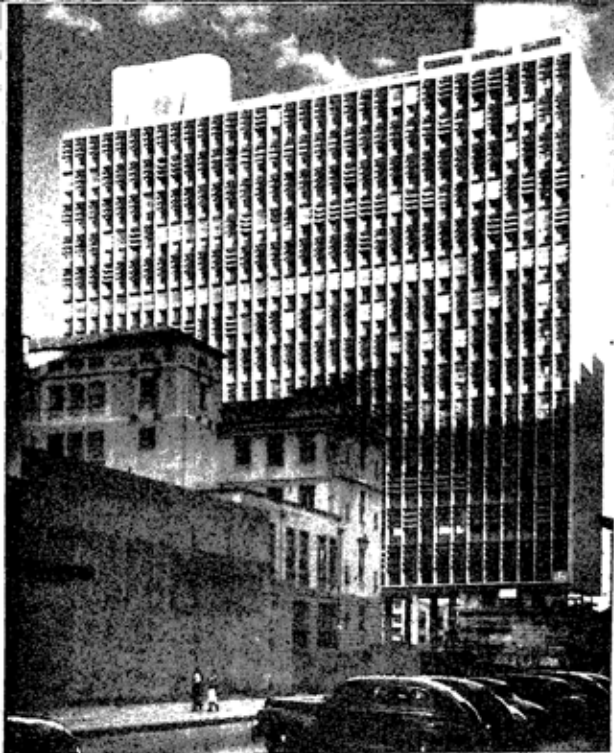
Third were the Futurists, poets of the machine and the fast car like Marinetti, creators of dream cities like St Elia, whom we should now think of as S.F. writers. They had a passion for the flamboyant manifesto. Most of them were Italian but they strongly influenced the streamlined architecture of Mendelsohn in Germany and the propaganda of Le Corbusier in France.

Last came Le Corbusier, himself a product of two French traditions, the rationalism descended from Viollet-le-Duc via Choisy and more remotely from Descartes, and the terrific new aesthetic of the engineers. He was convinced that the classic principles of design must be applied to a world utterly altered by machinery and mass-production. He was fascinated by geometrical ratios and systems of proportion. Above all he was a Parisian by conversion and believed passionately in what the new techniques could do for the great anthill metropolis.

All these individuals and groups interacted on one another. Wright influenced the de Stijl group and through them Mies and Mendelson. The Futurists influenced Le Corbusier and Le Corbusier influenced everybody. One thing all were sure of : this was not just another style. It was a way of life, a way out of chaos. The world had to choose (in his slogan) **ARCHITECTURE OR REVOLUTION.**

The man-made world was certainly in a hideous mess. When Le Corbusier's call to inspiration and action reached England in 1927, the country had dropped out of the race. As far as the cities were concerned, the Georgian tradition of neat terrace and corridor street had long since degenerated into mere barrack planning, endless rows of identical houses dumped down any old-how until they ran into a railway or a canal. This had led to a wave of escapism. In a sentimental dream of elms and cottages and cricket on village greens, reformers had planned and built 'garden-cities' like Letchworth and Welwyn, right away from it all, only to find their ideas, too, travestied by speculative builders, and the countryside (just reaching the picturesque maturity planned for it by the Georgian landscapists) disappearing rapidly in a sea of eight-to-the-acre. The cities were left to rot. The last effort to do something about them had been made in Paris by Napoleon III and his engineer Haussmann, who had cut great radiating avenues through the squalor on the model of the rides in a French forest. It helped the traffic and impressed the visitor, but it did nothing to make life and work in the anthill more healthy or humane. Other cities had followed suit—immensely rich Edwardian London with one new street, Kingsway.

On this complacent and decadent country descended Le Corbusier's conception of the *Ville Radieuse*—a city of three million inhabitants as geometrical as Peking, but 80 per cent. parkland interwoven at generous distances by a rectangular multi-level pattern of wide roads and



This government building of the late thirties at Rio de Janeiro was the first tall office building designed under the direct inspiration of Le Corbusier

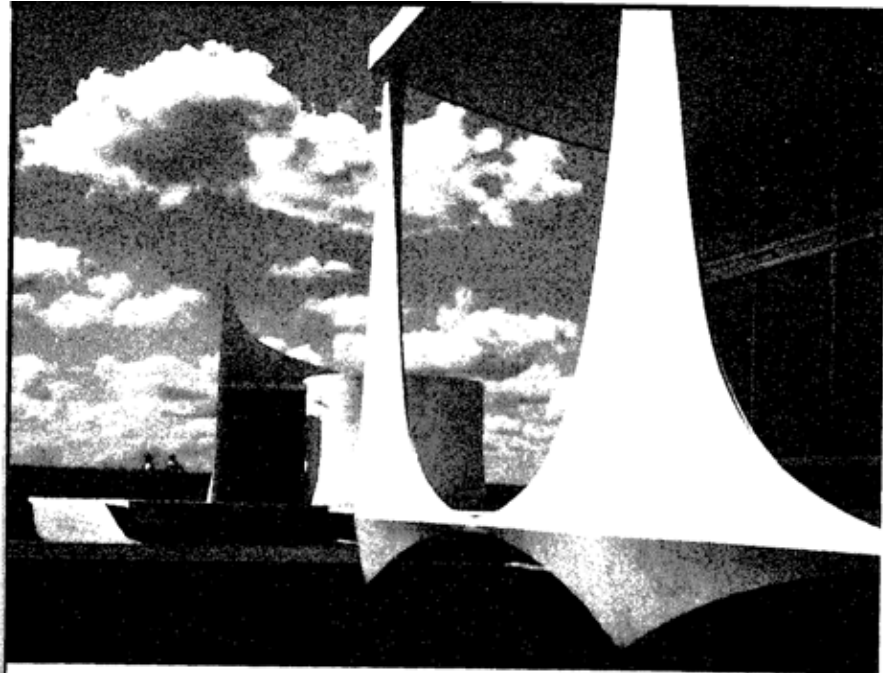
slabs of flats and punctuated by a stupendous row of identical glass skyscrapers. Such dream cities were nothing particularly new: the Italian and French Futurists and the early American S.F. writers had pictured them with varying degrees of earnestness and vulgarity. But Le Corbusier brought to the battle an artist's eye for spatial relationships, a brilliant propagandist technique and a prophetic sense of the urgency of the traffic crisis. And he kept at it. Each year he

refined his superhuman glass slabs and the windy acropolis around their great legs, and finally, in 1936, he got one built—in Rio, though there of course one side had to be heavily screened against the sun.

But the point was not so much the excitement of the tall building as the amount of ground it liberated. It was obvious that if you took the floor space of one city block and piled it up vertically in a tower, you gained infinitely better daylight, space for trees and above all (as it turned out) space for motor-cars. More than that, you completely altered the traditional conception of the city, which until now had been a composition of what I have called 'outdoor rooms' (sometimes accidental, sometimes deliberate) linked by corridor streets human in scale. Such spaces stacked up with parked cars made no sense, and were quite inadequate for movement. Instead of a maze of alleys with fine vistas hacked through it, you now had, in theory, a wide plain on which stood buildings like pieces of sculpture washed by the whole sky.¹ As for symmetry and the whole apparatus of axial planning coming down from Rome, it was dead as the dodo.

'What gives our dreams their daring,' wrote Le Corbusier, 'is that they can be realised.' It was only a matter of time (and war damage) before the dark canyon streets of our nineteenth-century cities began to break and receive floods of sun, while flat-tops, not steeples, pricked their skies. It was only a matter of

¹ 'Erige les constructions massives pour la ville future
Qu'elle s'élève dans le ciel libre des aviateurs.'
(Futurist poet of 1909)

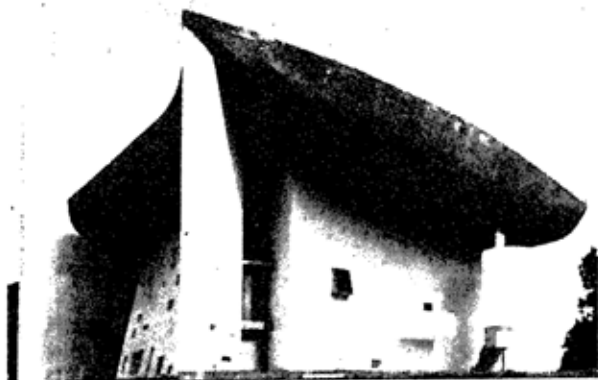


Contrasting handling of reinforced concrete by *above* Oscar Niemeyer in the Presidential Palace at Brasilia (1960) and *below* Kenzo Tange in the City Hall at Kurashiki, Japan (1961)



time before you could buy curtain-walling by the yard. But the old pedestrian city with its nooks and crannies had something which the far-flung, sun-soaked automobile cities of Chandigarh and Brasilia entirely lack, and the problem of marrying the old human scale with the new machine one is still there.

Chandigarh and Brasilia : our problems are now world-wide. The split with which this chapter started has been healed by the absolute dominance of Western technology. Germany, France, Scandinavia, Britain, America, Italy, Brazil, Mexico, Japan—each of these countries has at times seemed to lead, or made some special contribution. Sweden, for example, before finally settling for the 'international' style in 1930, had attempted a tasteful kind of neo-neo-classic gratefully copied by the architects of English inter-war town-halls. Denmark picked up the torch of William Morris and specialised in hand-wrought one-off jobs of extreme finesse ; Finland suddenly produced an isolated genius, Aalto. All these have influenced the reticent, not to say rationed, architecture of post-war Britain, whose schools particularly, humane and gay on a shoestring, consummated the marriage of art and industry just as her early reformers had vaguely known needed doing. The U.S.A. by contrast continued to lead the field in commercial architecture and produced the most sophisticated metal-and-glass buildings the world had so far seen. Latin America, and later Japan, exploited the discoveries of the French and Swiss pioneers in reinforced concrete. In Perret's day, concrete had been used in a

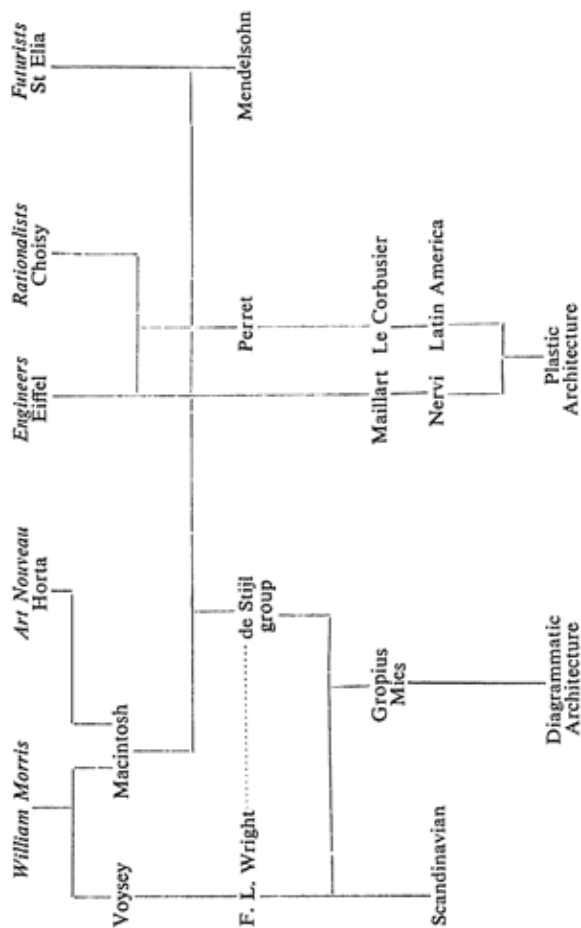


The little hilltop church at Ronchamps (1950) illustrates Le Corbusier's switch from diagrammatic to plastic architecture

rigid post-and-beam way like an unfriendly but fireproof variety of wood. Now it was realised that it is a mouldable, plastic material and not really like wood at all. Concrete slabs, folded or twisted or pleated like paper, gave designers the freedom of a new Baroque undreamt of by Borromini. Nervi in Italy and Le Corbusier himself in his later years triumphantly exploited the sculptural possibilities of this muscular and savage material.

Perhaps before we say goodbye to styles and look beyond them at the mind of the designer, the tree on the page opposite may help to identify the influences under which he works in this second half of the century.

The coming-together you notice at the foot of the diagram is bound to happen with the shrinkage of our world. We all read the same magazines. Consequently while the world will always produce individual geniuses,



the national schools so noticeable all through the story are already much less unlike one another. In contemporary Britain you can see decent copies of everything going on elsewhere. For what it is worth, it looks as if the plastic element in architecture, expressed in concrete, is coming back to challenge the diagrammatic element expressed in steel and glass. But that is only the stop-press news of the pendulum of taste. You have only to use your eyes to see that we are all, new countries and old alike, still knee-deep in the rubbish of past cynicism and exploitation. The great question now is whether we can use all we have learnt in two and a half thousand years to organise and inspire and control the vast operations we shall need to give all human beings a life-enhancing environment. For an answer, in the last chapter, we search the very back of our minds as designers.

CHAPTER 5 : *The Mind of the Architect*

It is impossible, you will have noticed, to write about architecture without repeatedly making judgments of value. Epithets like 'grim', 'elegant', 'solemn', 'frivolous' and so on creep in, and the logical person must wonder to what standards of behaviour they refer. He will find a bewildering variety of answers. Theories of architecture have come down to us from many periods, most of them throwing more light on the mind of the author and his age than on the buildings whose magic he sought to analyse. In the last hundred years a series of academic architects have compensated their own poverty of inspiration by investigating other people's wealth of it.

Sometimes these theories take the form of regulating lines and proportions as in the Orders ; sometimes they follow more abstruse geometrical figures and ratios like Alberti's and Le Corbusier's ; sometimes, particularly among the British who are interested in the literary associations of architecture, they are expressed in capital-letter words like Wootton's 'Commoditie, Firmeresse and Delight' or Ruskin's 'Seven Lamps' or Geoffrey Scott's 'Mass, Space, Line and Coherence' (there are plenty of others).

The possibilities in this direction have been explored by so many people that it seems more interesting in our

age to draw a few conclusions from their long and painstaking journeys, rather than to embark on another one of our own.

The most striking feature of the story is the absolute compulsiveness of fashion, or taste, or style, whichever one chooses to call it. Of course the rate of change has varied enormously. Restless societies, experimental in politics, like ancient Greece or Renaissance Italy or modern France, were equally experimental in architecture. Hieratic societies, like ancient Egypt or Rome or China, stayed put. And even allowing for our close-up view of the immediate past, the rate of change is accelerating as fast as global communications. Architects, formerly in reaction against the work of the last generation, nowadays avert their eyes from what they were doing themselves ten years ago. This is a most tiresome trait. No sooner have the illustrated papers discovered what he is up to than the designer is off in another direction, and the builders trundle along so far behind that they would be lapped by the leaders if the race were run on a closed circuit and not all over the landscape. Modern architecture, which its pioneers hoped would supersede and suppress the 'battle of the styles', has turned out just as susceptible to fashion as any other. In fact the first discovery one makes about the mind of the modern architect is that it is a 'group' mind, anxious when alone and nervous of critical opinion except in a very few outstandingly tough instances.

It is tempting to suppose that all this sound and fury signifies nothing, or nothing more than the swing of the

pendulum necessary to keep the clock ticking. This is a mistake. Moods alternate, but ideas take root and grow and become part of the landscape. Thus the Victorian reaction against the Rule of Taste, which produced all the 'horrors' that scandalised the neo-Georgians, we now see had a point. We don't go back and *build* Victorian, but we share their impatience with the dead-end stucco architecture of the eighteen-thirties. In other words, we live and learn, and as the world grows older men deepen their understanding and widen their appreciation of their past. No previous age has enjoyed *all* the architecture of the past as much as we do: cobbled and arcaded Mediterranean market-places, savage industrial landscapes, Palladian vistas, Victorian suburbs, Brasilia's monolithic statements at blaze of noon, gaslit alleys in tea-time dusk, glass towers, mud courts, skysigns—the list is endless, but the point is that a generation ago practically none of it was thought fit to be seen. Certain styles of building and landscape were civilised and the rest was a smelly and dangerous No Man's Land, crossed with all possible speed and the car windows up.

Broadmindedness of course has its dangers. '*Tout comprendre c'est tout pardonner*' is a doubtful principle in morals and a supine one in aesthetics. Architectural spivs and vandals exist, and without a standard of judgment, conscious or subconscious, one could not recognise them. Another danger of a little knowledge is that one is tempted to play around with the superficialities of style without understanding the forces of

climate and function from which they sprang. The British particularly, out on the edge of Europe, have been inclined to fall for Palladian porticos or concrete walls and spend the rest of their lives in deep shade or dripping with condensation. Great and satisfying buildings can only be produced by a far deeper exploration of our own problem and the way we live.

Yet the irrational forces exist, compelling in their own way. Each age has had its dream—like Alberti's dream of ancient Rome or Pugin's dream of the medieval city or Le Corbusier's *Ville Contemporaine*, and in the architect's mind the cool analysis of the scientist has to come to terms with the artist's burning desire to do a certain thing. It needs a strong spirit to grip the hypothesis and subject it in complete honesty to all the needs and conditions of the particular case.

From history we learn, above all, the capabilities of architecture. We see it, first of all, as the enclosing of space, the thing that keeps man sane and safe. The familiar fixed stars remotely do this, then the clouds, then the hillsides or forest edges of his home country. But with buildings he does it for himself, first for cosiness and security, like children at the bottom of the garden, then for effect, as when we pass from the tall shafted Egyptian temple hall into the farthest secret cell, or vice versa from the low porch into the Gothic cathedral nave. You can recognise this kind of architectural drama with your eyes shut, from its echoes, as when, in a sleeping car, you glide from the night into the immense vault of a big station. Or the sky can be our ceiling, as

it was from the earliest and simplest walled courtyards of the mud regions through to the Piazza San Marco and the Place Vendôme ; until with the Baroque, manipulation of space, indoors and out, became an obsession, conducted like a royal progress as far as the horizon. In our day, no visible barrier between interior and exterior is necessary at all, and we have the freedom to enclose or expose to whatever extent we feel we want to.

Buildings enclose space ; but they also occupy it, solidly, like pieces of sculpture. In this the Greek temple or the Indian or Indo-Chinese are at opposite poles to the Egyptian or the Christian. The Parthenon stands alone on its steep steps, in free air, to be admired from all sides ; whereas Santa Sophia is like a great tent (only in compression instead of tension), its exterior shape determined entirely by its interior space. But most buildings are not lonely monuments ; they stand about in some relationship with one another, sometimes like a row of soldiers, sometimes dodging behind one another like trees in a forest as one moves about. All these effects are within the architect's repertoire.

Buildings affect us not only by their shapes and relationships, but by their expression. They have ' faces ', bland and smooth, or rough and furrowed. Deep shadows lead into their recesses, lie under their eaves or float them off the ground. Even when the body of his building is there, the architect has to choose its suit. In some ages he did this within the narrow bounds of rules of taste ; in others he used geometrical

formulae ; in others he relied on his own touch. In each case the tiniest lightening or deeper scoring of a line could, as in a portrait, change its personality, and confer or withhold the kind of epithets with which this chapter began.

Then there is the subtle relationship between scale and size. What gives the cathedral its grandeur is not mere size. Westminster Abbey is less tall than the Vickers Building. It is the superhuman scale of its elements. It is the overwhelming contrast between its great portal and our own front door, and its windows and our windows, which makes it into the house of God. The *scale* is god-like. Renaissance despots were not slow to catch on to the idea, until scale became a symbol of social status, and the Victorian *petit-bourgeois* in his four-room villa pretended by his big porch and plate-glass windows that he was a bigger man than his cottage-building ancestors.

But buildings are more than pieces of sculpture you can go inside. They are also assemblies of parts with a practical job to do—machines, if you like, for living in ; and a time comes, as after the centuries of the Renaissance, when architects grow impatient with aesthetics and violently react towards the primitive conception of structure as the essence of architecture. A structure exactly right for its job is as satisfying as a perfectly resolved equation, and if the most economical structure is not invariably the most elegant, architects feel that it ought to be. Uneven spans and awkward junctions between one component and another, even if they work,

are as painful to them as a discord in a Mozart sonata. For they are at heart Platonists, and believe that somewhere the flawless solution of every problem exists, if they could find it. Justice to every aspect of practical need must not merely be done but must be seen to be done.

Almost at the opposite extreme from this abstract conception of architecture is the sensuous appeal of its surfaces. First stone—weighty, crystalline, granular. Building stones have a range as wide as that of wine, and the connoisseur can tell them blindfold : travertine, granite, slate, limestone, marble. Then wood, stone's converse : light, dry, fibrous, in texture as rough and dry as larch packing case or as smooth and oily as a teak draining-board—most amenable and humane of all the traditional materials. Then handy-sized brick, despised for centuries as stone's poor relation, and therefore encased by architects in plaster, wood or marble, but now accepted into the fraternity of indoor facing materials. To these primeval stand-bys we now add steel and the other metals, not handy, not workable, but unparalleled for abstract grace and the solid embodiment of human rationality. We add concrete, steel's converse and complement, rough and mouldable, in which human beings can embody what D. H. Lawrence called their dark side. And we add glass and all the glazed materials, right at the other end of the textural scale. Finally, after all these hard resonant materials, that smash the falling glass and hurt the groping hand, we come to the textiles, blessed materials that cushion the tread, tone

down the din of the children's party, blanket out the wet night. In terms of texture, fabrics have the widest range of all—from tweed to chiffon, from linen to velvet, from damask to canvas. And in the modern interior they have two new and vital roles. The first is to act as foil to the natural materials—stone, wood, glass—that we use so freely, softening their angularities and adding sophistication to their simplicity. The second is to divide our freely planned interiors into their different uses, so that by the pull of a curtain or two we can set any one of a whole variety of scenes.

But the ultimate lesson we learn from history is that architecture is no one of these things, but all. It does not end at the front door or the garden gate or the street or the town or the region. If you look at man's history as the progressive control of a hostile environment, then in one sense it has been a brutal process of burning forests and slaughtered animals and enslaved human beings. In another, it has been the gradual and intelligent permeation of sensible ideas of living together, of justice and discipline freely accepted in everybody's best interest. In another, it has been the transformation of a cruel and savage environment into a productive and life-enhancing one. All these processes have had their ups and downs. Dark-age Europe was less beautiful than the classical Mediterranean, Victorian mill-towns less beautiful than Bath or Brighton. Our own vast populations and high living standards set us the hardest problem of all. But at any rate we know that beauty and culture are not much good (as in modern Tokyo)

behind a high wall, and that *our* problem is not intensive but extensive : it is a question of getting the world we want.

The more we try to analyse the capabilities of architecture, the more we risk losing sight of what it really is, which is a synthesis. The architect's rational mind puts together his complicated brief : the climate, the existing scene, the client's spoken desires and unspoken needs, the money and time available and all the alternative structures and precedents and services and finishes at his command. But in the end, out of his subconscious mind, comes the Idea, a single thing greater than the sum of its parts and greater than any electronic computer, fed the same data, could come up with. 'After all,' wrote Simone Weil, 'every day we see around us a universe in which an infinite number of mechanical movements combine to create an order which through all its variations seems immutable. We love the beauty of our world, because we feel behind it the presence of something like the wisdom we ourselves aspire to. On their own level, our loveliest works of art show how independent factors can unite in an object of unique beauty in a way that is impossible to analyse.'

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This is a tiny personal choice out of a huge field. The Royal Institute of British Architects publishes annually a *List of Books on Architecture for Schools* which is just the thing for grown-ups.



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